

Wayne State University DigitalCommons@WayneState

Wayne State University Dissertations

1-1-2013

Moving Engagement Research To A Higher Level: The Impact Of Unit-Level Engagement On Business Metric Outcomes

Tara Kristen McClure
Wayne State University,

Follow this and additional works at: http://digitalcommons.wayne.edu/oa_dissertations

Recommended Citation

McClure, Tara Kristen, "Moving Engagement Research To A Higher Level: The Impact Of Unit-Level Engagement On Business Metric Outcomes" (2013). *Wayne State University Dissertations*. Paper 784.

This Open Access Dissertation is brought to you for free and open access by DigitalCommons@WayneState. It has been accepted for inclusion in Wayne State University Dissertations by an authorized administrator of DigitalCommons@WayneState.

**MOVING ENGAGEMENT RESEARCH TO A HIGHER LEVEL: THE IMPACT OF
UNIT-LEVEL ENGAGEMENT ON BUSINESS METRIC OUTCOMES**

by

TARA K. McCLURE

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2013

MAJOR: PSYCHOLOGY
(Industrial-Organizational)

Approved by:

Advisor

Date

© COPYRIGHT BY

TARA K. McCLURE

2013

All Rights Reserved

DEDICATION

For my family – past, present, and future.

ACKNOWLEDGMENTS

There are several people I would like to thank for their support and guidance during my graduate school journey. First and foremost, I would like to thank my advisor, Dr. Boris Baltes, for the advice and guidance he provided not only on my dissertation, but during my time at Wayne State as well. I would also like to thank my committee members Dr. John Arnold, Dr. Marcus Dickson, and Dr. Jason Huang for their input and feedback on this manuscript. I thank you all for the time you dedicated to this project.

Thank you to my family for their love and support from day one of this journey. And a special thanks to my husband, Scott Johnson, who has seen me through the dissertation process and the beginning of my consulting career. I can never thank you enough for the sacrifices you have made and I could not have taken these final steps without your support and encouragement.

Lastly, I would like to thank my study buddies over the years – Madhura Chakrabarti, Malasri Chaudhery-Malgeri, and Heather Mullins. Thank you for all the advice, support, and encouragement you offered as we sat at local coffee shops working over the weekends.

TABLE OF CONTENTS

Dedication.....	ii
Acknowledgments.....	iii
List of Tables.....	vi
List of Figures.....	viii
Chapter 1 Introduction.....	1
The Rise and Popularity of Engagement.....	2
Academic Perspectives on Engagement.....	10
Discriminant Validation Evidence of Engagement.....	25
Engagement vs. Workaholism.....	25
Engagement vs. Job Attitudes.....	30
The Antecedents and Consequences of Engagement.....	40
Moving Engagement Research to a Higher Level.....	54
Crossover of Engagement.....	55
Consequences of Unit Level Engagement.....	59
The Current Study.....	66
Chapter 2 Method.....	77
Participants.....	77
Procedure.....	78
Measures.....	79
Analyses.....	83
Chapter 3 Results.....	87
Chapter 4 Discussion.....	103

Limitations and Future Research.....	111
References.....	157
Abstract.....	181
Autobiographical Statement.....	183

LIST OF TABLES

Table 1: Practitioner Definitions of Employee Engagement.....	115
Table 2: Individual Level Sample Demographics.....	117
Table 3: Unit Level Sample Demographics.....	119
Table 4: Job Attitude Measures Means, Standard Deviations, and Bivariate Correlations.....	120
Table 5: Chi-square Results Exploring Demographic Differences between Individuals Included in Analyses, Individuals Excluded for Missing Data or Repeated Responding, and Individuals Identified Outliers.....	121
Table 6: Breakdown of the Demographic Differences between Individuals Included in Analyses, Individuals Excluded for Missing Data or Repeated Responding, and Individuals Identified as Outliers.....	123
Table 7: Mean Differences between Individuals Included in Analyses, Individuals Excluded for Missing Data or Repeated Responding, and Individuals Identified as Outliers.....	124
Table 8: Engagement Index Confirmatory Factor Analysis Results – Model Fit.....	125
Table 9: Engagement Index Confirmatory Factor Analysis Results – Latent Inter-Correlations of the Engagement Facets.....	126
Table 10: Follow Up Engagement Index Confirmatory Factor Analysis Results – Model Fit.....	127
Table 11: Job Attitude Confirmatory Factor Analysis Results – Model Fit.....	128
Table 12: Job Attitude Confirmatory Factor Analysis Results – Latent Inter- Correlations of the Job Attitude Measures.....	129
Table 13: Statistical Justification for Aggregation - r_{wg} Results for Individual- level Job Attitude Measures.....	130
Table 14: Descriptive Statistics for Unit-Level Job Attitude Variables.....	131
Table 15: Descriptive Statistics for Unit-Level Business Metrics.....	132
Table 16: Correlations Between Unit-Level Job Attitude Variables.....	133
Table 17: Correlations Between Engagement and 2009 Business Metrics.....	134

Table 18: Correlations Between Engagement Facets and 2009 Business Metrics....	137
Table 19: Correlations Between Job Attitude Measures and 2009 Business Metrics.....	141
Table 20: Regression Results for 2009 Voluntary Turnover.....	145
Table 21: Regression Results for 2009 Earnings Using Highest Unit Scores.....	146
Table 22: Regression Results for 2009 Earnings Using Lowest Unit Scores.....	147
Table 23: Mediation Results for Voluntary Turnover.....	148
Table 24: Mediation Results for Earnings Using Lowest Unit Engagement Score....	149
Table 25: Mediation Results for Earnings Using Highest Unit Engagement Score...	150
Table 26: Mean Differences between Supervisors and Employees on the Job Attitude Variables.....	151
Table 27: Correlations between Engagement and 2009 Business Metrics – Overall, Supervisors and Employees.....	152
Table 28: Moderation Results for Voluntary Turnover Using the Lowest Unit Engagement Score.....	153
Table 29: Moderation Results for Earnings Using the Lowest Unit Engagement Score.....	154
Table 30: Moderation Results for Earnings Using the Highest Unit Engagement Score.....	155

LIST OF FIGURES

Figure 1: The Job Demands-Resources Model of Work Engagement.....	115
Figure 2: Relationship between the Minimum Score on Engagement and 2009 Voluntary Turnover.....	135
Figure 3: Relationships between the Minimum and Maximum Scores on Engagement and 2009 EBITDA.....	136
Figure 4: Relationships between the Engagement Facets and 2009 Voluntary Turnover.....	138
Figure 5: Relationships between the Mean Scores on the Engagement Facets and 2009 EBITDA.....	139
Figure 6: Relationships between the Minimum Scores on the Engagement Facets and 2009 EBITDA.....	140
Figure 7: Relationships between the Minimum Scores on the Job Attitude Measures and 2009 Voluntary Turnover.....	142
Figure 8: Relationships between the Maximum Scores on the Job Attitude Measures and 2009 EBITDA.....	143
Figure 9: Relationships between the Minimum Scores on the Job Attitude Measures and 2009 EBITDA.....	144
Figure 10: The Impact of Unit-Level Standard Deviation on Engagement on the Relationship between Earnings and the Highest Unit Engagement Score.....	156

CHAPTER 1

INTRODUCTION

Employee engagement is a relatively new construct within the field of Industrial-Organizational Psychology. While the construct has been slow to take hold within the academic literature, it has quickly become a hot topic within the applied and business environments. Because of the rapid growth within these areas, many definitions of employee engagement have emerged, creating a great deal of conceptual confusion around the construct. In their review of the literature, Macey and Schneider (2008) summarized the following common elements of the engagement construct: (a) it is a desirable condition; (b) it has an organizational purpose; (c) it connotes involvement, commitment, passion, enthusiasm, focused effort, and energy; (d) it has both attitudinal and behavioral components; (e) its antecedents are located in the conditions of work; and (f) its consequences are thought to be of value to organizational effectiveness. The pair concluded that engagement “is characterized by feelings of passion, energy, enthusiasm, and activation” (p. 24).

Macey and Schneider’s (2008) review sparked a renewed interest and focus on engagement. Recent research within the academic literature has helped to further resolve some of the mystery behind the construct. The purpose of this dissertation is to add to the growing body of work on engagement, by exploring the effects of unit-level engagement on business unit outcomes (e.g., turnover, earnings, and operational costs). The remainder of this introduction will review what is currently known about engagement before providing more detail on the present study. First, it will go back to the origins of the engagement construct and explore why it has become

so popular within organizations. Then, it will elaborate on what has been written about engagement within the academic research literature. The three different perspectives on engagement within the academic community - that of psychological presence (Kahn, 1990, 1992; May, Gilson, & Harter, 2004), burnout (Maslach, Schaufeli & Leiter, 2001), and well-being (Schaufeli, Salanova, González-Romá, & Bakker, 2002) – will be discussed. Next, this introduction will explore the discriminant validation evidence of the engagement construct and discuss work that has been done to highlight its distinctiveness from workaholism and other job attitudes (i.e., job satisfaction, organizational commitment, job involvement). Following that, research on the antecedents and consequences of employee engagement will be summarized within the framework of the Job Demands-Resources Model. Finally, this introduction will conclude by considering the feasibility and usefulness of conceptualizing engagement beyond the individual, at higher levels of analysis such as the work group or organizational level. This discussion will lead into the purpose and hypotheses of the current study.

The Rise and Popularity of Engagement

The roots of the employee engagement construct can be traced back to the 1999 work of Buckingham & Coffman, *First Break All the Rules*. The popularity of this book put engagement into the spotlight and created an overnight sensation in the business consulting world (Shuck & Wollard, 2010). While interest in engagement has been rather modest within the academic literature, it has quickly become a prominent topic of interest within the applied arena. To illustrate the popularity of this new trend, thousands of articles have surfaced within the popular business press sporting titles

such as, *Raising Engagement* (Fox, 2010), *Harnessing the Power of an Engaged Workforce* (Cantrell & Benton, 2005), *Engagement Keeps the Doctor Away* (Crabtree, 2005), *Engaged Employee = Business Pride* (Weinstein, 2010), *Employee Engagement Key to Improved Results* (*Employee Engagement*, 2011), and *Employee Engagement Is Now Crucial* (Pullan, 2011). Furthermore, an Amazon online bookstore search conducted by Schohat & Vigoda-Gadot (2010) yielded nearly two thousand publications on the topic, each making enticing claims such as,

“Employee engagement is the cornerstone of achieving a sustainable competitive advantage; there is clear and mounting evidence that employee engagement keenly correlates to individual, group, and corporate performance in areas such as retention, productivity, customer service and loyalty; or engaged employees are more productive, engender greater customer satisfaction and loyalty, and help promote a company’s brand” (p. 99).

These and other such publications tout the many benefits of an engaged workforce, namely enhanced productivity and improved organizational performance (Erickson, 2005). It is no wonder that Macey and colleagues came to the following conclusion: “rarely has a term...resonated as strongly with business executives as employee engagement has in recent years” (Macey, Schneider, Barbera & Young, 2009, p. xv).

Interest in engagement comes at a time when businesses are facing significant economic challenges. Organizations around the globe are confronted with an aging workforce, rising labor costs, a decreasing supply of labor, gaps in many key skill areas, greater employee mobility, the erosion of transparency and trust in management, and fundamental changes in employees’ expectations of their workplace (Aselstine & Alletson, 2006; Erickson, 2005; Masson, Royal, Agnew & Fine, 2008). The recent economic downturn has done little to assist organizations in facing

these challenges; morale in those who have avoided job cuts thus far has sunk to an all time low. As a result, those who have stayed will most likely be looking for new opportunities once market conditions improve (Robison, 2009). In fact, a recent CareerBuilder survey suggests that one in five workers is planning to leave their job for another position (O'Neil, 2010).

All this comes at a time when organizations must increasingly rely on the psychological knowledge and experience of their workers (Schaufeli & Salanova, 2008). In order to effectively compete amidst the current economic uncertainty, organizations not only need to recruit top talent, but they also must encourage employees to apply their full capabilities at work (Bakker, Albrecht, & Leiter, 2011a; Leiter & Bakker, 2010). In the face of global competition, growing competitive pressures, and rapid change, organizations have gone leaner and are being forced to do more with less; thus, making employee contributions a critical business issue (Masson et al., 2008; Schaufeli & Salanova, 2007). As Schaufeli and Salanova (2007) summarize, "Today's organizations require their employees to be motivated, proactive, responsible, and involved. Instead of just 'doing one's job,' employees are expected 'to go the extra mile'" (p. 140). Taken together, these factors support the prediction of one author who suggested there is a, "perfect storm brewing that will make retention and engagement a key issue in the future" (2004, p. 29).

At the very time when employee engagement is most crucial to organizational success, reports suggest that not only is engagement on the decline, but there is a deepening disengagement among today's workforce (Gruman & Saks, 2011). In fact, many authors have begun investigating this crisis in employee motivation and

engagement to get a more accurate picture of current engagement levels. The Gallup Organization claims that only one in every five workers is engaged in their work (Attridge, 2009). Furthermore, 54% of workers are not engaged and “have essentially ‘checked out,’ sleepwalking through their workday” (Seijits & Crim, 2006, p. 1). Worse yet, approximately 17% of employees are actively disengaged. This group spends their time acting out their unhappiness and undermining the work of their engaged coworkers (Seijits & Crim, 2006). Similar estimates have been found by several other large consulting firms, including Towers Perrin, BlessingWhite, and the Corporate Leadership Council (Attridge, 2009). The recent economic downturn has done little to improve this picture. A 2009/2010 U.S. Strategic Rewards Survey conducted by Watson Wyatt revealed that employee engagement levels have dropped nine percent among all employees since 2008, while engagement levels among top performers have fallen even further, to nearly 25 percent (Miller, 2009).

The costs to organizations of these estimates are astounding. Bates (2004) wrote, “We’re running as an economy at 30 percent efficiency because so many workers are not contributing as much as they could” (p. 46). In her testimony before U.S. Senate Committee on Health, Education, Labor and Pensions, Erickson commented that while the costs of low engagement are difficult to calculate, they must be enormous, as they “add up day-by-day and employee by employee as people do the minimum necessary to get by and withhold discretionary behaviors that can lead to higher performance” (2005, p. 17). The Gallup Organization has attempted to estimate the cost of this engagement gap, figuring that disengaged workers cost

companies within the United States between \$250 and \$350 billion a year in lost productivity (Attridge, 2009; Gruman & Saks, 2011; Saks, 2006).

Given the economic challenges facing organizations, the low prevalence of engagement within the workforce, and the cost estimates associated with having a large number of disengaged employees, business leaders are becoming increasingly interested in engagement. In his review of the research and business literatures on engagement, Attridge (2009) noted that the construct was ranked within the top five challenges facing management by a group of Chief Executive Officers from around the globe. A survey of business executives by the firm Accenture found that 72% of these leaders consider employee engagement to be critically important to the competitive success of their companies (Cantrell & Benton, 2005). Among organizations striving to attract and retain key talent post-recession, employee engagement has moved to the top of the agenda (Stevens, 2010).

Practitioners have been quick to address this interest in employee engagement, so much so that a plethora of different definitions and measures of the construct now exist. The dictionary defines engagement as “emotional involvement or commitment” or as “the state of being in gear” (Schaufeli & Bakker, 2010, p. 11). Because the concept uses a common word, as opposed to scientific jargon, individuals have a tendency to relate to it immediately and intuitively know what it means (Maslach, 2011). This has resulted in the proliferation of engagement definitions, along with a general reluctance to rely on scientific guidance and information. Meyer, Gagne and Parfyonova (2010) commented that while relatively easy to recognize, engagement

has proven very difficult to define. Schneider and colleagues summed this up by stating,

“...ask five different people to define engagement and you’ll likely get five different answers. Better yet, ask five providers of employee surveys, and you may find that each has pulled together a different combination of traits under a single umbrella they refer to as employee engagement” (Schneider, Macey, Barbera, Young & Lee, 2006, p. 1).

Much of this can be attributed to what Macey and Schneider (2008a) refer to as the “bottom-up manner” in which the engagement notion quickly evolved within the applied community (p. 3).

Table 1 illustrates the diversity in engagement definitions currently being put into practice. Given the diversity of definitions, it is obvious that the definition and measurement of engagement is neither uniform, nor clear (Fleck & Inceoglu, 2010; Schneider, Macey, Barbera & Martin, 2009; Shuck & Wollard, 2010). First, most authors do not distinguish attitudes and behaviors, often using both to define the engagement construct (Little & Little, 2006). Many have noted that engagement is often defined as a trait, a state, a set of behaviors, characteristics of the work environment, or some combination of these (Fleck & Inceoglu, 2010; Macey & Schneider, 2008a). Second, many definitions of engagement invoke existing constructs and fail to distinguish them from engagement (Little & Little, 2006). For example, many engagement definitions encompass aspects of job satisfaction, organizational commitment, organizational citizenship behaviors (OCBs), and job involvement (Bakker, Albrecht & Leiter, 2011; Dalal, Baysinger, Brummel, & LeBreton, 2009; Little & Little, 2006; Macey & Schneider 2008a; Macey & Schneider, 2008b; Masson et al., 2008; Saks, 2006; Schaufeli & Bakker, 2010; Zigarmi, Nimmon, Houson,

Witt, & Diehl, 2009). Engagement inventories often contain items that are used to measure these better known constructs (Dalal et al., 2009). Furthermore, some consulting firms have simply re-packaged existing employee opinion surveys, calling them engagement surveys (Macey & Schneider, 2008a; Schneider, Macey, Barbera & Martin, 2009).

All of this has led to a great deal of confusion around the construct of employee engagement and valid concerns regarding the redundancy of the construct. Many academicians have questioned whether engagement is conceptually and empirically different from other constructs (Christian, Garza & Slaughter, 2011). Saks (2006) commented, “Employee engagement has the appearance of being somewhat faddish or what some might call, ‘old wine in a new bottle’” (p. 601). This may account for the relatively small body of academic literature on the topic. Interestingly, the little existent academic research on engagement also tends to take a differing perspective from that of practitioners. In contrast to the practitioner emphasis of engagement with the organization, the academic literature primarily focuses on engagement within the context of the work or job role (Masson et al., 2008). Thus, it appears that engagement may have different meaning for practitioners than researchers, with each group having unique needs and points of view on the topic (Maslach, 2011; Zigarmi et al., 2009).

In an attempt to “untangle the jangle” (Schaufeli & Baker, 2010, p. 20), Macey and Schneider (2008a) wrote a focal article on the employee engagement construct. While they acknowledge that academicians have been “slow to jump on the practitioner engagement bandwagon” (p. 4), their review pulls from a diverse body of

psychological literature, attempting to clarify the conceptual meaning of engagement, ground the construct in theory, and highlight its distinctions from other existing constructs, in an effort to encourage future academic work in this area. Macey and Schneider take a different approach to engagement, providing a conceptual framework for understanding the construct which includes trait, state, and behavioral forms of engagement. They define state engagement broadly as “a desirable condition [that] has an organizational purpose, and connotes involvement, commitment, passion, enthusiasm, focused effort, and energy” (p. 4). Macey and Schneider refer to trait engagement as “the [dispositional] tendency to experience work in positive, active, and energetic ways and to behave adaptively” (p. 21). Behavioral engagement, which focuses on the visible manifestations of engagement, refers to “adaptive behavior intended to serve an organizational purpose, whether to defend and protect the status quo in response to actual or anticipated threats or to change and/or promote change in response to actual or anticipated events” (p. 18). Further, they suggest the antecedents of engagement tend to be located in the conditions of work, while its consequences are thought to be of value to organizational effectiveness.

Macey and Schneider’s (2008) article sparked a renewed interest in employee engagement on both sides of the academic-practitioner divide. Many have weighed in on the engagement debate and stressed the need for conceptual clarity and to better focus its measurement on the construct itself (Albrecht, 2010; Fleck & Inceoglu, 2010; Shuck & Wollard, 2010; Zigarmi et al., 2009). This has led to the simplification of

Macey and Schneider's (2008) framework. Dalal, Brummel, Wee and Thomas (2008) propose:

"What Macey and Schneider call state engagement is probably better referred to simply as engagement, with the recognition that (a) engagement is likely to contain both trait-like and state-like components; and (b) engagement is a cognitive-affective construct, not a dispositional or behavioral one. In addition, what they call trait engagement and behavioral engagement are probably better referred to not as engagement at all, but rather as putative dispositional antecedents and behavioral consequences of engagement" (p. 55).

Both researchers and practitioners seem to agree with the idea that engagement is both a positive and active work-related psychological state (Albrecht, 2010; Parker & Griffin, 2011). Further, engagement can also be viewed as a motivational state reflected in a genuine willingness to invest focused effort toward organizational goals and success (Albrecht, 2010).

Academic Perspectives on Engagement

Within the academic literature, there have been three primary perspectives on engagement. The first to coin the term engagement and offer a theoretical perspective on the topic was Kahn (1990, 1992). Kahn's perspective, which talks about engagement as psychological presence within one's work role, was the only conceptualization of engagement within the academic literature for almost a decade. The second perspective of engagement, first appearing in 1997, grew out of work on the topic of burnout (Maslach & Leiter, 1997). This perspective views engagement as the positive antithesis of burnout. The final perspective on engagement takes a well-being perspective (Schaufeli, Salanova, González-Romá, & Bakker, 2002). While these researchers agree that burnout and engagement are negatively related, they

maintain that they are not each others' exact opposites. As a result, Schaufeli and colleagues deem it appropriate to define engagement in its own right.

Looking first at Kahn's perspective on engagement, his primary assumption was that people bring in and leave out various depths of their selves during the course of the work day. According to Kahn (2010), he developed the engagement concept to address an issue often overlooked in traditional studies of work motivation; that is, the fact that employees offer up different degrees and dimensions of themselves according to some internal formula that is both conscious and unconscious. While traditional motivation studies implicitly assumed that workers were either on or off, he maintained that workers were much more complicated. Kahn explained it in this way, "Like actors, they [employees] make choices about how much of their real selves they bring into their role performances" (2010, p. 20).

Kahn (1992) defined personal engagement as, "the harnessing of organizational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performance" (p. 694). Engaged workers are physically involved in tasks, they are cognitively vigilant, and are empathetically connected to others, allowing them to express their thoughts and feelings, creativity, values and beliefs to the benefit of their work. As a result, they are able to simultaneously convey and bring alive both their self and their obligatory role. On the other hand, Kahn defined personal disengagement as, "the uncoupling of selves from work roles; in disengagement, people withdraw and defend themselves physically, cognitively, or emotionally during role performances" (p. 694). In disengagement, individuals' behaviors display an

evacuation or suppression of their expressive and energetic selves when enacting their roles. This type of behavior is typically characterized as robotic, apathetic, or effortless.

In a follow-up paper, Kahn (1992) built on the theory of personal engagement and disengagement he outlined in his original work. He elaborated on what it means to be psychologically present, specifying four main dimensions: attentive, connected, integrated, and focused. An individual who is fully *attentive* is not disabled by anxiety and is open, rather than closed, to others. *Connected* refers to empathy, the “process by which a person projectively identifies with, i.e., puts self in the place of, another person and creates a connecting bond between them” (p. 326). This involves people feeling related to some aspect of their situations. *Integrated* has to do with various dimensions of one’s self tapping into a given situation. The individual is able to call upon and juggle any and all dimensions of his/her self in handling situations that arise throughout the workday. Finally, individuals who are *focused* are fully present in the moment and are able to simultaneously maintain the integrity of their self and the role. Collectively, these four dimensions define what it means for people to be alive, fully present, and accessible in a given work role.

In his original paper, Kahn (1990) conducted an ethnographic study within a group of camp counselors and members of an architecture firm in order to investigate the conditions under which people engaged and disengaged during their work role performance. Through this work, he was able to identify three psychological conditions, which when present, influenced personally engaging behaviors: meaningfulness, safety, and availability. First, *meaningfulness* involves a feeling that

one is receiving something in return from investing their selves in work; it is determined by task characteristics, role characteristics, and work interactions. *Safety*, a feeling that one is able to show and employ his or her self without fearing negative consequences to self-image, status, or career, is determined by the following four factors: interpersonal relationships, group and inter-group dynamics, management style and process, and organizational norms. Lastly, *availability* is associated with distractions such as depletion of physical and emotional energy, individual insecurity, and outside lives, which may preoccupy people to varying degrees and therefore leave them with fewer resources to engage in role performance.

Of the three academic perspectives on engagement, Kahn's has received the least attention within the research literature. May, Gilson, and Harter (2004) built on this earlier work, conducting a field study within a Midwestern insurance company to explore the determinants and mediating effects of the three psychological conditions outlined by Kahn (meaningfulness, safety, and availability). Looking first at the determinants of Kahn's psychological conditions, May and colleagues found the following: both job enrichment and work role fit were positively related to meaningfulness; supportive supervisors and rewarding coworker relations were positively related to psychological safety, while adherence to coworker norms was negatively related; and finally, resources was positively related and participation in outside activities was negatively related to availability.

In order to explore the relationships between engagement and meaningfulness, psychological safety and availability, May and colleagues created a three-dimensional scale to measure engagement based on Kahn's conceptualization, consisting of

cognitive, emotional, and physical components. Results indicated that both meaningfulness and psychological safety were positively related to engagement; however, availability was not related to engagement. Follow-up analyses indicated that the resources variable was acting as a suppressor, resulting in a non-significant relationship between availability and engagement. After controlling for resources, the relationship between availability and engagement was positive and significant. Mediation analyses indicated that meaningfulness fully mediated the effects of job enrichment and work role fit on engagement. In addition, psychological safety partially mediated the relationship between coworkers' norms and engagement. May and colleagues concluded that all three of the psychological conditions proposed by Kahn are important in determining an individual's engagement at work.

Rothbard (2001) also used Kahn's work as a starting point, defining engagement as psychological presence. However, Rothbard went further by claiming that engagement involved two critical components, that of attention and absorption. Rothbard defined attention as "cognitive availability and the amount of time one spends thinking about a role" and absorption as "being engrossed in a role and refers to the intensity of one's focus on a role" (p. 656). While these represent related motivational constructs, Rothbard viewed them as distinct from each other. She explained, "...attention devoted to a role may be thought of as an invisible, material resource that a person can allocate in multiple ways, whereas absorption implies intrinsic motivation in a role" (p. 657). In her 2001 study, Rothbard created an engagement measure consisting of a four-item attention scale and a five-item

absorption scale. Additionally, she went a step further and looked at engagement not only within the work environment, but within the family or home environment as well.

The second perspective on engagement within the academic literature evolved from research on burnout, a metaphor commonly used to describe a state of mental weariness (Schaufeli, Taris, & van Rhenen, 2008). Burnout emerged as an important concept in the 1970s, originally focusing on individuals working within human services and health care. Interviews with individuals in these areas revealed that they often felt emotionally exhausted, developed negative perceptions and feelings about their clients or patients, and experienced crises in professional competence as a result of the emotional turmoil (Schaufeli, Leiter, & Maslach, 2009). By the late 1980s, however, both researchers and practitioners began to realize that burnout occurred outside the human services as well.

The most widely conceptualized theory of burnout comes from Maslach and colleagues. Maslach, Schaufeli, and Leiter (2001) conceptualized burnout as “a psychological syndrome in response to chronic interpersonal stressors on the job” (p. 399), involving three dimensions: exhaustion, cynicism, and inefficacy. Exhaustion refers to the depletion or draining of mental resources and is the central quality and most obvious manifestation of the syndrome (Schaufeli, et al., 2008). This aspect reflects the stress dimension of burnout and typically prompts actions to distance oneself both cognitively and emotionally from the job (Maslach, et al., 2001). Cynicism, the second dimension, refers to indifference or a distant attitude towards ones’ job (Schaufeli, et al., 2008). This aspect reflects the interpersonal context dimension of burnout and is very closely related to exhaustion (Maslach, et al., 2001).

Finally, inefficacy, or reduced personal accomplishment, is the tendency to evaluate one's work performance negatively, leading to feelings of insufficiency or poor job-related self-esteem (Schaufeli, et al., 2008). This third, self-evaluation dimension of burnout develops in parallel with the first two dimensions, and it is likely that exhaustion and cynicism erode one's sense of effectiveness (Maslach, et al., 2001).

In an effort to expand the construct, Maslach and Leiter (1997) began to research and explore the positive antithesis of burnout, job engagement. From this perspective, engagement is defined as "an energetic state of involvement with personally fulfilling activities that enhance one's sense of professional efficacy" (Maslach & Leiter, 2008, p. 498). Engagement is further characterized by the direct opposites of the three burnout dimensions: energy, involvement, and efficacy. Thus, engagement is assessed by the opposite pattern of scores on the three burnout dimensions using the Maslach Burnout Inventory (MBI), the most widely used measure of the syndrome. Therefore, from the perspective of Maslach and colleagues, "people's psychological relationships to their jobs have been conceptualized as a continuum between the negative experience of burnout and the positive experience of engagement" (Maslach & Leiter, p. 498).

A good deal of research has been conducted utilizing Maslach and colleagues' conceptualization of engagement, particularly with the area of occupational health psychology. One line of research concerning the antecedents of burnout and engagement formulates a model concerned with the degree of match or mismatch between an individual and six domains of his or her job environment, namely workload, control, reward, community, fairness, and values (Maslach, Schaufeli, &

Leiter, 2001). *Workload* refers to the amount of work, the extent to which it requires emotional labor, and the match between the skill level of the individual and that required by the job. *Control* indicates the extent to which the individual has authority and control over resources needed for the job. The third workplace domain, *rewards*, refers not only to financial rewards, but to social and intrinsic rewards as well. *Community* indicates the extent to which the individual has social support in the work environment. *Fairness* is primarily concerned with perceived fairness, the extent to which there is equity in pay and workload, whether the individual feels as if he/she has a voice in grievance or dispute resolution, and the extent to which evaluations are handled appropriately. Finally, the last domain, *values*, explores the extent to which the individuals' and organizations' values overlap.

Within this model, the critical issue is the individual's appraisal of the extent of congruency between themselves and the job (Maslach & Leiter, 2008). The greater the gap or mismatch between the individual and these six areas, the greater the likelihood of burnout; on the other hand, the greater the fit or match, the greater the likelihood of engagement (Maslach, Schaufeli & Leiter, 2001). Thus, better fit is assumed to predict better adjustment and less strain.

Maslach and Leiter (2008) empirically tested this model in a longitudinal study of business and administrative employees at a university. Participants were surveyed on burnout – engagement using the MBI and the six areas of work life at two time points separated by a year. In order to make a determination of where individuals fell on the burnout-engagement continuum, Maslach and Leiter looked at scores on the exhaustion and cynicism dimensions of the MBI. Median splits were used to create

four quadrants corresponding to the following patterns: above the median on both dimensions (burnout), below the median on both dimensions (engagement), and above the median on one dimension, but below the median on the other (exhaustion only, cynicism only). Results of the study revealed two interesting findings. First, incongruence or a mismatch in the six areas of work life was associated with burnout, providing support for the mismatch theory as an antecedent of burnout. Second, individuals who displayed an inconsistent pattern of burnout-engagement at time one (those falling within the exhaustion only or cynicism only quadrants), were likely to have changed by time two. The direction of the change, towards burnout or engagement, can be determined by the degree of match or mismatch in the six areas of work life. Maslach and Leiter were able to determine that the primary tipping point of this change was an individual's perceptions of fairness within the workplace.

The third and final perspective on engagement within the academic literature also has its roots within the burnout literature. Schaufeli and colleagues take a differing perspective from Maslach and Leiter (1997), who maintain burnout and engagement are bipolar dimensions and can therefore be assessed with a single instrument. While Schaufeli and colleagues agree that burnout and engagement are opposite concepts, they argue that both concepts have different structures and should be measured independently, with different instruments (Bakker, Schaufeli, Demerouti, & Euwema, 2006; Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2007; Schaufeli & Salanova, 2011; Schaufeli, Salanova, González-Romá & Bakker, 2002). They maintain that engagement should be conceptualized in its own right, as work-related well-being.

Schaufeli's conceptualization of engagement does agree with that of the burnout perspective up to a certain point. Schaufeli and colleagues identified two underlying dimensions of work-related well-being: activation, ranging from exhaustion to vigor, and identification, ranging from cynicism to dedication (Schaufeli & Salanova, 2007; Schaufeli, Salanova, González-Romá & Bakker, 2002). While burnout is characterized by a combination of exhaustion (low activation) and cynicism (low identification), engagement is characterized by the opposite pattern – high activation and identification. The two camps differ in regards to the third dimension of each concept. Burnout includes reduced professional efficacy; however, the direct opposite of this third aspect is not included in the engagement concept for two primary reasons. First, Schaufeli and Salanova (2007) noted that there is accumulating evidence that exhaustion and cynicism constitute the core of burnout, whereas the third dimension, lack of professional efficacy, seems to play a different and less prominent role. Second, based upon discussions and interviews with employees and supervisors, Schaufeli and colleagues discovered that engagement is particularly characterized by being totally immersed and engrossed in one's work. Therefore, this third aspect of engagement is distinct, and cannot be considered the direct opposite of professional inefficacy. Schaufeli and Bakker (2004) conclude, "Seen from this perspective, instead of perfectly complementary and mutually exclusive states, burnout and engagement are independent states that – because of their antithetical nature – are supposed to be negatively related" (p. 294).

Schaufeli and colleagues define engagement as, "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption"

(Schaufeli, Salanova, González-Romá & Bakker, 2002, p. 74). Vigor refers to high levels of energy and mental resilience while working, a willingness to invest effort in one's work, and persistence even in the face of difficulties. Dedication is characterized by being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge (Schaufeli & Salanova, 2007; Schaufeli Salanova, González-Romá & Bakker, 2002). Schaufeli and colleagues prefer the term dedication to involvement, as dedication goes a step beyond the usual level of identification and has a wider scope by not only referring to a particular cognitive or belief state, but to an affective dimension as well (2002). Absorption, the final dimension of engagement, refers to being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties detaching from work. Schaufeli and colleagues commented that while absorption comes close to flow (a state of optimal experience characterized by focused attention, a clear mind, and effortless concentration; Csikszentmihalyi, 1990), flow is a more complex concept referring to peak experiences instead of a more pervasive and persistent state of mind (Schaufeli Salanova, González-Romá & Bakker, 2002).

Two qualitative studies provide a better picture of Schaufeli's conceptualization of engagement. In the first study, Schaufeli, Taris, LeBlanc, Peeters, Bakker and De Jonge conducted structured interviews with a group of highly engaged, Dutch employees (as cited in Schaufeli & Salanova, 2007, p. 143). The interviews revealed that engaged employees were active agents, taking initiative at work and generating their own positive feedback loops. They looked for new challenges and experiences in their work, and changed jobs when they were no longer provided with these

opportunities. Engaged employees were committed to providing the highest level of quality, often receiving positive feedback from others (e.g., supervisors, colleagues, customers). The values of an engaged employees seemed to match well with those of the organization. Engaged employees often participated in and are engaged by activities outside of work as well. Finally, although they sometimes felt tired, unlike burned out employees who described their fatigue as a negative state, engaged employees described their tiredness as pleasant state because of its associations with positive accomplishments.

In a second study conducted by Engelbrecht (2006), a group of Danish midwives were asked to describe a highly engaged colleague. Interviews with these individuals revealed that an engaged midwife radiated energy and boosted the morale of those around him or her, even in tough and frustrating times. An engaged midwife was willing to go above and beyond what is typically required to handle situations and is a source of inspiration to other colleagues. One participant responded with the following description:

“She has a positive attitude towards her work and is happy for the things she is doing. The love (for her job) is expressed through the passion with which she fulfills her daily tasks. In addition to the normal tasks of a midwife, she is also engaged in other job-related but voluntary activities at the ward” (p. 154).

These two qualitative studies paint the picture of an engaged employee as one who is fulfilled by his or her work and can effectively cope with the demands of the job. Engagement can therefore be thought of as a persistent and pervasive affective-cognitive state, in which individuals have an energetic and effective connection with

their work activities (Schaufeli & Salanova, 2007; Schaufeli Salanova, González-Romá & Bakker, 2002).

According to Meyer, Gagne, and Parfyonova (2010), the conceptualization of engagement developed by Schaufeli and colleagues serves as the basis for the most widely used measure of engagement in academic research. Schaufeli, Salanova, González-Romá, and Bakker (2002) created a self-report questionnaire called the Utrecht Work Engagement Scale (UWES) to assess engagement. The UWES includes a total of 17 items assessing the three dimensions of engagement: vigor, dedication, and absorption. The vigor scale has six items; individuals scoring high on this dimension have energy, zest, and stamina while working. Five items are included in the dedication scale; individuals scoring high on this aspect identify with their work because they experience it as meaningful, inspiring, and challenging. Further, they feel enthusiastic and proud of their work. The absorption scale has six items; individuals scoring high on this dimension of engagement are happily engrossed in their work and are wrapped up in their work to the point that they have difficulty detaching themselves from it. In addition to the 17-item version of the UWES, Schaufeli and colleagues have also created a shortened version of the scale, with three items assessing each of the three dimensions of engagement (Schaufeli, Bakker, & Salanova, 2006). To date, the UWES is available in over twenty languages and publications have validated the UWES in several countries including China, Finland, Greece, South Africa, Spain, the Netherlands, Italy, Norway, and Japan (Bakker & Demerouti, 2008; Schaufeli & Salanova, 2007; Shimazu, Miyanaka & Schaufeli, 2010; for examples of validation publications refer to Balducci, Fraccaroli &

Schaufeli, 2008; Nerstad, Richardsen, & Martinussen, 2010; Shimazu, Schaufeli, Miyanaka, & Iwata, 2010).

Given its widespread use, the psychometric properties of the UWES, including factorial validity, scale inter-correlations, internal consistency, cross-national invariance, and stability, have been well studied. With only a few exceptions (e.g., Sonnentag, 2003; Wefald & Downey, 2009), confirmatory factor analyses have shown that the three-factor structure of the UWES is slightly superior to a one-factor model which assumes an undifferentiated engagement factor (Nerstad et al., 2010; Schaufeli & Bakker, 2003; Schaufeli & Bakker, 2004; Schaufeli, Martinez, Marques Pinto, Salanova, & Bakker, 2002; Seppälä, Mauno, Feldt, Hakanen, Kinnunen, Tolvanen, & Schaufeli, 2009). In those instances where a three-factor structure did not emerge, Bakker and Demerouti (2008) speculated that this could be partially attributed to translation problems with items containing metaphors (e.g., Time flies when I am working.). While most research supports the use of a three-factor model of engagement, researchers note that the three engagement factors are highly correlated. Correlations between the three factors typically exceed .65, while correlations between latent variables typically range from .80 to .96 (Bakker & Demerouti, 2008; Nerstad et al., 2010; Schaufeli & Bakker, 2010; Schaufeli & Salanova, 2007; Wefald & Downey, 2009). As a result, Schaufeli and Bakker (2003) have argued that the total score for work engagement may be more useful in empirical research. Both versions of the UWES have also been found to have good internal consistency, exceeding Nunnally and Bernstein's (1994) critical value of .70. Cronbach's alpha ranges between .80 and .90 for the long version of the scale, with

slightly lower, but acceptable alphas for the shortened version (ranging from .70 and .80) (Schaufeli & Salanova, 2007).

Research publications have also explored the stability of the UWES across countries, occupational groups, and time. Schaufeli and colleagues have found that while the factor structure of the UWES does not differ across countries, there are slight differences in the size of the factor loadings and the correlations between latent factors (Schaufeli & Salanova, 2007; Schaufeli & Bakker, 2010). Additionally, there was no evidence of item bias across different racial groups (Schaufeli & Salanova, 2007; Schaufeli & Bakker, 2010). Two studies have addressed the stability of the UWES across various occupational groups. Nerstad and colleagues (2010) found the factor loadings, correlations, and error variances of the UWES to be invariant across ten different occupational groups, including social workers, teachers, nurses, journalists, police officers, and air traffic controllers, among others. A second study by Seppälä and colleagues (2009) also found that the factor structure of the short version of the UWES remained largely the same across five different occupational groups. Taken together, these findings seem to suggest that individuals from different occupations tend to interpret the scale in a conceptually similar manner. Finally, several studies have explored the stability of the UWES across time. Two longitudinal studies carried out in Australia and Norway found that the stability coefficients of the three UWES scales ranged between .50 and .60 across a one year time interval (Schaufeli & Bakker, 2003). More recently, Schaufeli and Bakker (2010) noted that the mean stability coefficient for both the long and short versions of the scale across a one year time interval was .65. Furthermore, Seppälä and colleagues (2009) found

high stability coefficients for the short version of the UWES across a three-year time interval. Thus, the psychometric properties of the UWES have been well documented within the academic literature.

Discriminant Validation Evidence of Engagement

A key controversy within the engagement literature is the extent to which engagement represents a unique construct. Gruman and Saks (2011) noted that engagement has been subject to substantial criticism, with some suggesting that there is substantial overlap and redundancy between engagement and other constructs. The pair pointed out that there is overlap among many constructs within the organizational sciences, citing a meta-analysis by Meyer, Stanley, Herscovitch, and Topolnytsky (2002) looking at the relationship between job satisfaction and affective commitment as an example. While this study revealed a correlation between the variables of .65, Gruman and Saks noted that such levels of association still leave room for differential relationships with other outcome variables of interest and can add to our understanding of organizational phenomena. In order to put the construct redundancy criticism to rest, engagement researchers need to establish evidence of discriminant validity in order to establish engagement as a stand-alone construct (Christian, Garza & Slaughter, 2011). This section will explore evidence for the discriminant validity of engagement from workaholism and three common job attitudes: job satisfaction, organizational commitment, and job involvement.

Engagement vs. Workaholism

The term workaholism was coined by Wayne Oates, a Baptist clergyman and professor of the psychology of religion, who told of his personal struggles with

overwork (Schaufeli, Taris, & Bakker, 2006; Schaufeli, Taris & van Rhenen, 2008; Taris, Schaufeli & Shimazu, 2010). In 1971, he published, *Confessions of a Workaholic*, a book written for a broad audience of lay people in which he defined workaholism as “the compulsion or the uncontrollable need to work incessantly” (p. 11). Within workaholics, the need to work is so exaggerated that it endangers their health, reduces their happiness, and deteriorates their interpersonal relationships and social functioning (Schaufeli, Bakker, van der Heijden & Prins, 2009; Schaufeli, Taris & Baker, 2006). From Oates’ perspective, workaholism is by definition bad, as it is an addiction akin to alcoholism. Scott, Moore, and Miceli (1997) critically reviewed the literature in this area and summarized three features of workaholics. First, workaholics spend a great deal of time engaging in work activities when given the discretion to do so – they are excessively hard workers. Second, workaholics are reluctant to disengage from work; they persistently and frequently think about work even when they are not at work. Workaholics are obsessed with their work; they are compulsive workers. Finally, workaholics work beyond what is reasonably expected from them to meet organizational or economic requirements.

Based upon these descriptions, workaholism can be thought of as a syndrome or set of two characteristics that occur together: working excessively and working compulsively (Schaufeli, Bakker, van der Heijden & Prins, 2009; Schaufeli, Taris, & Bakker, 2006; Schaufeli, Taris & Bakker, 2008; Schaufeli, Taris & van Rhenen, 2008). Schaufeli and colleagues (2009) performed a study in which they identified clusters of Dutch medical residents based upon their scores on the two aspects of workaholism. Cluster analysis resulted in four groups: workaholics, non-workaholics, hardworking

residents, and compulsive working residents. As predicted, the combination of working excessively and working compulsively related to the most unfavorable conditions in terms of a resident's job demands, job resources, and organizational behavior. Further, they found that working compulsively was a slightly more important feature of workaholism than working excessively.

While there are some similarities between workaholism and engagement, there are a number of distinguishing features as well. Both workaholics and engaged workers are hard workers. Schaufeli and Salanova (2007) noted that the absorption aspect of work engagement is moderately and positively correlated with the working excessively scale of workaholism. Yet, although both groups engage in a similar behavior, working long hours, the underlying motivation for doing so differs (Shimazu & Schaufeli, 2008). While workaholics are propelled by an obsessive inner drive they cannot resist, engaged employees find their work challenging and intrinsically motivating (Schaufeli & Bakker, 2010; Schaufeli & Salanova, 2007; Shimazu & Schaufeli, 2008). A recent study by van Beek, Hu, Schaufeli, Taris, and Schreurs (2012) supported these findings. While engagement was associated with high levels of intrinsic motivation, workaholism was primarily associated with two forms of extrinsic motivation: introjected regulation and identified regulation. In addition to differences in motivation, workaholism lacks the positive affective or fun component of engagement (Gorgievski, Bakker & Schaufeli, 2010). For engaged employees, feelings of tiredness are described as a pleasant state due to the positive accomplishments they are associated with (Bakker & Demerouti, 2008). Engaged

employees lack the compulsive element of workaholism; further, engaged employees also enjoy other activities outside of work (Schaufeli & Salanova, 2007).

To date, very few studies have explored the relationship between engagement and workaholism empirically (Taris, Schaufeli & Shimazu, 2010). Schaufeli, Taris, and Bakker (2006) conducted a study among a group of Dutch employees from a wide range of companies and occupations with the purpose of exploring the discriminant validity of engagement and workaholism. Schaufeli and colleagues first used structural equation modeling to explore the relationship between engagement, as measured by the UWES, and workaholism, assessed with two scales – working excessively and working compulsively. They found that both workaholism components could be differentiated from engagement. As expected, the two workaholism components were strongly correlated, sharing more than half of their variance. While the excessive work component was positively correlated with work engagement, working compulsively was not.

Additionally, Schaufeli and colleagues (2006) also explored the relationships of these constructs with employee well-being (perceived health, overall life satisfaction, and the number of days absent due to sickness in the past year), overwork, job performance, extra-role performance (OCBs), and innovativeness. They found that both constructs were related to overwork; engaged employees also worked beyond what is required by the job or organization. However, while workaholism was negatively related to health and well-being, relationships with engagement were positive. Neither component of workaholism was related to sickness absence. Working compulsively was negatively related to happiness, whereas engagement was

positively related to perceived health and happiness and negatively related to sickness absence. In terms of the relationships with performance outcomes, both components of workaholism were positively related to extra-role performance and working excessively was also positively related to innovativeness. Neither component of workaholism was related to in-role performance. In contrast, engagement was positively related to all three performance indicators.

A second study by Schaufeli, Taris, and van Rhenen (2008) also provides empirical evidence to distinguish engagement from workaholism, this time within a sample of Dutch telecom managers. Schaufeli and colleagues (2008) again conducted structural equation modeling and found that the best-fitting model indicated that workaholism and engagement were distinct constructs. At the sub-scale level, the group also found that absorption weakly loaded onto the workaholism scale, again suggesting that engagement and workaholism overlap in terms of being absorbed in one's work. However, the factor-level association between engagement and workaholism was low, suggesting that after taking the relationship between absorption and workaholism into account, there was no substantive relationship between engagement and workaholism.

Schaufeli and colleagues (2008) also explored the relationships of these two constructs with excess working time, job characteristics, job demands, job resources, work outcomes, social relations, and perceived health. Their findings revealed that managers scoring high on engagement were almost exclusively characterized by positive features: they enjoyed good mental health, had smooth social functioning, and worked in resourceful jobs with positive outcomes. However, this group of engaged

managers also worked long hours. In contrast, managers high on workaholism were characterized by predominately negative features: they suffered from health problems, had impaired social functioning, and worked in demanding jobs with poor resources and poor outcomes. Despite these conditions, and the fact that they work long hours, managers scoring high on workaholism still felt committed to their organization.

In summary, the factor-analytic evidence discussed in the two studies above supports the conceptual distinction between engagement and workaholism. Furthermore, the pattern of relationships with related constructs also suggests that engagement and workaholism are empirically distinct (Taris, Schaufeli, & Shimazu, 2010). Although there are some similarities – both engaged workers and workaholics tend to spend much time working, are committed to their jobs, and report high levels of extra-role behavior – engagement is typically associated with good health and well-being, desirable job characteristics, and high levels of in-role performance. These relationships are absent or negative for workaholics.

Engagement vs. Job Attitudes

Job Satisfaction. Locke (1976) defined job satisfaction as “a pleasurable or positive emotional state resulting from the appraisal of one’s job” (p. 1300). It is an evaluative description of one’s job conditions or characteristics (Christian, Garza & Slaughter, 2011). As such, job satisfaction pertains to what an organization does for its employees to make them feel good about being there. It conveys the fulfillment of needs, maintaining the status quo, satiation, and contentment (Macey, Schneider, Barbera & Young, 2009; Schneider, Macey, Barbera, Young & Lee, 2006). In contrast, engagement is more than just simple satisfaction with work arrangements, it

is about passion and commitment, the willingness to invest oneself and expend one's discretionary effort for the good of the organization (Erickson, 2005). According to Christian, Garza, and Slaughter (2011) engagement is a description of an individual's experiences resulting from work.

Unlike job satisfaction, engagement connotes activation (alertness, excitement, elation) and emphasizes energy and enthusiasm (Christian, Garza & Slaughter, 2011; Macey & Schneider, 2008; Macey, Schneider, Barbera & Young, 2009; Schaufeli & Bakker, 2010). Inceoglu and Fleck (2010) illustrated this distinction by placing engagement and job satisfaction within the well-established affective circumplex (Russell, 2003). The affective circumplex describes affect along the two axes of arousal and pleasure. Combining these two axes results in four quadrants: activated positive affect (enthusiasm), activated negative affect (anxiety), low activation negative affect (depression), and low activation positive affect (contentment, satisfaction). While job satisfaction and engagement do share variance, the two constructs can be placed in different quadrants of the affective circumplex: engagement in the high activation, positive affect quadrant and job satisfaction in the low activation, positive affect quadrant.

Although job satisfaction and engagement are related constructs, Erickson (2005) purposes they are different phenomena arising from different sources. In their research, Macey and colleagues (2009) have consistently found that the drivers of satisfaction are issues that pertain to what the organization provides to an employee, whereas the drivers of engagement involve the factors that impact an employee's ability to maximize his or her contribution to the organization. Drivers of satisfaction

primarily include job security, benefits, and opportunities for a better job. In contrast, drivers of engagement include opportunities to use one's skills, a clear link between one's work and the organization's objectives, and encouragement to innovate.

Organizational Commitment. Mowday, Steers, and Porter (1979) defined organizational commitment as "the relative strength of an individual's identification with and involvement in a particular organization" (p. 226). More recently, Meyer and Allen (1991) conceptualized three components of organizational commitment: affective, continuance, and normative commitment. Affective commitment, the most relevant to discussions of engagement, is defined as an emotional attachment with an organization based upon shared values and interests. According to Schneider and colleagues (2009), organizational commitment refers to how individuals feel about the organization that employs them in terms of pride in working there, loyalty to the organization, a sense of identification with the organization, and a willingness to extend themselves in ways that promote the good of the organization.

Engagement differs from affective commitment in three ways. First, commitment is organization-focused, while engagement is work-focused (Schaufeli & Bakker, 2010). Affective commitment refers to an affective attachment to the values of the organization as a whole, whereas engagement represents perceptions based upon the work itself (Christian, Garza & Slaughter, 2011). Second, unlike engagement, commitment reflects more of a passive rather than active state. It lacks the enthusiasm, urgency, and intensity that characterize engagement (Macey, Schneider, Barbera, & Young, 2009). Finally, engagement is a broader construct in that it involves a holistic investment of the entire self in terms of cognitive, emotional,

and physical energies. In contrast, affective commitment represents a state of emotional attachment. As a result, commitment can be viewed as a facet of engagement, but is not sufficient for engagement in and of itself (Christian, Garza, & Slaughter, 2011).

Job Involvement. Within the research literature, there have been two different approaches to job involvement. The first approach to job involvement focuses on how a job influences an individual's self-esteem (e.g., Lodahl & Kejner, 1965). In contrast, the second approach focuses on how a job defines an individual's identity (e.g., Lawler & Hall, 1970). Perhaps the clearest and most precise definition of the construct comes from Kanungo (1979) and takes more of a motivational approach, stressing a cognitive, psychological identification with work. Kanungo (1982) maintained that job involvement is a "cognitive or belief state of psychological identification" (p. 324). From this perspective, job involvement results from a cognitive judgment about the need satisfying abilities of the job. A meta-analysis by Brown (1996) described a job-involved person as someone who: a) finds their job motivating and challenging; b) is committed both to their work in general, the specific job, and the organization, making them less inclined to leave their position; and c) engages more closely in professional relationships, and as a result, stands a better chance of receiving feedback.

According to May, Gilson, and Harter (2004), engagement differs from job involvement in that its focus is on how an individual employs his or herself during the performance of his/her job. As a result, engagement is a broader construct which entails not only cognition, but the active use of emotions and behaviors as well. Fleck

and Inceoglu (2010) argue that engagement, particularly the absorption dimension, has a stronger cognitive emphasis than job involvement. When individuals are absorbed in their work, they are totally engrossed and lose themselves completely; individuals are so cognitively involved that they notice their surroundings only peripherally. In addition to this stronger cognitive emphasis, engagement also encompasses energy and efficacy (Macey & Schneider, 2008). Fleck and Inceoglu (2010) comment that the sense of energy engaged individuals derive from their work emphasizes the affective or emotional side of the engagement construct. These emotions derived from working energize an individual psychologically and induce appropriate action. Finally, Christian and colleagues (2011) note that while job involvement refers to the degree to which the job situation, which is broadly defined, is central to an individual's identity, it does not refer to the specific work tasks, as is the case with engagement. Therefore, similar to organizational commitment, while job involvement may also be considered a facet of engagement, it is not sufficient for engagement in and of itself (Macey & Schneider, 2008; Schaufeli & Bakker, 2010).

Empirical Evidence Distinguishing Engagement from Job Attitudes. A recent focus within the research literature has been on providing empirical evidence to distinguish the engagement construct from the job attitudes described above. Four studies, in particular, lend support to the notion that engagement can be considered a stand-alone construct. First, Hallberg and Schaufeli (2006) investigated whether engagement could be empirically distinguished from both job involvement and organizational commitment. Using data from sample of nearly 200 information communication technology consultants from a Swedish management consultancy

company, the researchers explored the relationships between the three constructs, as well as their patterns of correlations with other related constructs (e.g., health complaints, job and personal factors, and turnover intentions). While engagement, job involvement, and organizational commitment all refer to positive attachments to work, latent inter-correlations between constructs ranged between .35 and .46, indicating minimal shared variance (between 12% and 21%). CFA analyses supported this assumption, with a three-factor model in which engagement, job involvement, and organizational commitment are three distinct constructs demonstrating superior fit to a one-factor model.

Furthermore, Hallberg and Schaufeli (2006) found that the patterns of correlations with other constructs also revealed some important differences between engagement, job involvement, and organizational commitment. Engagement had strong, negative correlations with health complaints (emotional exhaustion, cynicism, depressive symptoms, somatic complaints, and sleep disturbances). With the exception of somatic complaints, organizational commitment was also negatively related with health complaints, though the correlations were more modest in magnitude. In contrast, job involvement was not significantly related to health complaints at all. All three constructs were significantly, negatively correlated with turnover intentions, though this relationship was strongest for organizational commitment. Engagement, job involvement, and organizational commitment all appeared to increase in the presence of autonomy and feedback, though positive job characteristics seemed to be less important for job involvement. Job involvement was positively related to workload (role overload) and intrinsic motivation, while both

engagement and organizational commitment were both significantly and negatively related to role conflict. Based upon these results, Hallberg and Schaufeli concluded that engagement, job involvement, and organizational commitment could be considered distinct constructs.

A second study by Dalal, Baysinger, Brummel, and LeBreton (2009) sought to empirically demonstrate the “value add” from engagement above and beyond more established attitudinal predictors. Dalal and colleagues looked at the relative importance of several job attitudes (job satisfaction, positive affect, organizational commitment, job involvement, perceived organizational support, work centrality, and negative affect), along with engagement, in predicting employee contributions to the organization (task performance, citizenship behaviors, and counterproductive work behaviors (CWBs)). They performed dominance analysis to determine the relative importance of each predictor. Dominance weights, which sum to unity, indicate the percentage of explained variance in the criterion that is attributable to a given predictor. For task performance, results indicated that negative affect had the highest relative importance, with a dominance weight of .38. This was followed by job satisfaction (.16), engagement (.15), job involvement (.11), perceived organizational support (.09), work centrality (.04), organizational commitment (.04) and positive affect (.03). For OCBs, engagement had the highest relative importance (.25), followed by work centrality (.19), job satisfaction (.14), positive affect (.12), perceived organizational support (.10), negative affect (.08), organizational commitment (.06), and job involvement (.06). Finally, for CWBs, negative affect again had the highest relative importance (.56), followed by perceived organizational support (.14),

employee engagement (.13), job satisfaction (.06), positive affect (.04), organizational commitment (.03), work centrality (.02), and job involvement (.01).

Finally, Dalal and colleagues (2009) conducted a multivariate analysis to determine the relative importance of the predictors in determining all three criterion variables. They found that negative affect had the highest relative weight (.31), followed by engagement (.15), job satisfaction (.12), work centrality (.10), job involvement (.10), perceived organizational support (.09), positive affect (.08), and organizational commitment (.05). In addition to emphasizing the continued importance of job satisfaction, the results of Dalal and colleagues also justify the recent enthusiasm behind the engagement construct.

A third study by Rich, LePine, and Crawford (2010) investigated the mediating role of engagement in the relationship between a group of antecedents (value congruence, perceived organizational support (POS), and core self-evaluations (CSE)) and performance outcomes (task performance and OCBs) in a sample of 245 firefighters and their supervisors. Rich and colleagues hypothesized that engagement would be a more comprehensive mediator when compared to other well-established constructs such as job involvement, job satisfaction, and intrinsic motivation. Looking first at the correlations, engagement was significantly related to the three other constructs (correlations ranged from .35 to .56). All four constructs also had significant relationships with both performance outcomes, though the relationship between engagement and both task performance and OCBs appeared to be slightly stronger.

Rich and colleagues (2010) then used SEM to test a model in which the antecedents (value congruence, POS, and CSE) related to engagement, job involvement, job satisfaction, and intrinsic motivation. Each of these four variables were hypothesized to be related to both task performance and OCBs. The standardized path estimates from engagement to task performance and OCBs were positive and statistically significant ($\beta = .25$ and $.27$, respectively). Supervisors of fire fighters indicating they were highly engaged reported that these employees had higher levels of both performance outcomes. Path estimates to engagement from the three antecedent variables were also positive and statistically significant (value congruence $\beta=.35$, POS $\beta=.37$, and CSE $\beta=.36$). Firefighters reported being more highly engaged when they perceived that these three antecedent variables were present. Interestingly, although the zero-order correlations were all significant, when considered as part of the overall model, job involvement, job satisfaction, and intrinsic motivation did not have any statistically significant relationships with the two performance outcomes. Rich and colleagues concluded that when considered along with engagement, these other constructs appear to have little predictive relevance, providing further empirical support for the distinctiveness and usefulness of the engagement construct.

A final study by Christian, Garza, and Slaughter (2011) performed a meta-analysis of the engagement literature. In order to be included, a study needed to provide the data necessary to compute a correlation between a measure of engagement and at least one construct of interest and had to be at the individual level. Two further criteria were used to determine which measures of engagement to include

in the meta-analysis. First, the measure of engagement had to refer to the actual work being performed. Second, the measure had to refer to the psychological investment in the work or in the performance of work. In other words, the measure had to reference a physical, emotional, and/or cognitive personal investment in one's work; furthermore, measures included in the study had to refer at least two of these conceptual dimensions. The inclusion criteria listed above yielded a total of 91 studies (80 of which were published) and resulted in 770 effect sizes.

Christian and colleagues (2011) first looked at the corrected mean correlations of engagement with the following job attitudes: job satisfaction, organizational commitment, and job involvement. Engagement was positively correlated with each of these constructs, with mean corrected correlations ranging from .52 to .59. However, as expected, none of these relationships approached unity (i.e., none of the 95% confidence interval included 1.0), providing evidence of discriminant validity. Christian and colleagues also found that engagement was positively related to both task performance ($M_p = .43$) and contextual performance ($M_p = .34$). As a final step, they conducted multiple regression analyses to determine the incremental validity of engagement in predicting task and contextual performance. Job satisfaction, organizational commitment, and job involvement were entered in the first step, followed by engagement in the second step. Two separate regressions were performed, one for each dependent variable. For task performance, when engagement was added in the second step, the change in R^2 was significant ($\Delta R^2 = .19, p < .001$). Similarly, for contextual performance, when engagement was added in step two, the change in R^2 was again significant ($\Delta R^2 = .16, p < .001$). Christian and

colleagues commented that the finding that engagement has incremental criterion validity over the other job attitudes provides further empirical evidence that engagement's conceptual space is somewhat different.

While there is still some debate among academicians on the extent to which engagement represents a unique construct, the empirical research reviewed in this section provides evidence of its discriminant validity and supports its use as a stand-alone construct. Bakker, Albrecht and Leiter (2011a) commented:

“There is clear and sufficient theory (e.g., Inceoglu & Fleck, 2010) and research (e.g., Hallberg & Schaufeli, 2006) demonstrating that engagement is an important standalone motivational construct that is independent of other such constructs which, in the main, are better conceptualized as outcomes of engagement” (p. 9).

While engagement still has its critics, more and more researchers are coming to similar conclusions, that engagement is more than a repackaging of related constructs (e.g., Bakker & Leiter, 2010; Parker & Griffin, 2011).

The Antecedents and Consequences of Engagement

The Job Demands-Resources (JD-R) model provides a theoretical framework around the engagement construct and has been used within the literature more often than any other model or theory (Hakanen & Roodt, 2010). As such, it is a useful framework for exploring the antecedents and consequences of engagement. The JD-R model is a heuristic model that includes two specific sets of working conditions, job demands and job resources, which predict employee well-being (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). According to Bakker & Demerouti (2007),

“At the heart of the Job Demands-Resources (JD-R) model lies the assumption that whereas every occupation may have its own specific risk factors associated with job stress, these factors can be classified in two general

categories (i.e., job demands and job resources), thus constituting an overarching model that may be applied to various occupational settings, irrespective of the particular demands and resources involved” (p. 312).

The JD-R model, which draws upon both the stress and motivation research traditions, is a comprehensive attempt at simultaneously explaining the well-being and ill-health of employees, along with the related antecedents and consequences (Demerouti & Bakker, 2011; Hakanen, Schaufeli & Ahola, 2008). The JD-R Model of Work Engagement is presented in Figure 1.

Job demands refer to “those physical, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e., cognitive and emotional) effort on the part of the employee, and are therefore associated with certain physiological and/or psychological costs” (Demerouti et al., 2001, p. 501). In other words, job demands are stimuli that require attention and response on behalf of the individual. While job demands are not necessarily negative, they may become job stressors when meeting the demands requires great effort to sustain expected performance levels, and as a result, may lead to negative responses such as chronic fatigue or burnout (Schaufeli & Bakker, 2004). Examples of job demands include the following: time and work pressure, emotional labor, an adverse physical work environment, role ambiguity, role conflict, and role overload (Hakanen & Roodt, 2010).

In contrast, job resources refer to “those physical, psychological, social, or organizational aspects of the job that may (a) reduce job demands and the associated physiological and psychological costs, (b) are functional in achieving work goals, and (c) stimulate personal growth, learning and development” (Demerouti et al., 2001, p. 501). Job resources are not only needed to cope with job demands, but are also

important in their own right, as they provide a means to the achievement and protection of other valued resources (Bakker & Demerouti, 2007). Job resources can be located at the following four levels: the organization, interpersonal and social relations, the specific job position, or the task (Hakanen & Roodt, 2010). Organizational level job resources include salary, career opportunities, and job security. Supervisor and coworker support and team climate are two examples of interpersonal and social relations. Job resources specific to the job position include role clarity and participation in decision-making. Finally, performance feedback, skill variety, task identity, task significance, and autonomy are all examples of task-level job resources. These job resources can be relevant to engagement in varying degrees in different professional groups, and even for individuals employed within the same organization.

Within the JD-R model, two different underlying psychological processes play a role in the development of well-being and ill-health. The health impairment process refers to an energy sapping process, within which high job demands exhaust individuals' mental and physical resources, contributing to burnout and ill-health (Hakanen & Roodt, 2010). According to Bakker and Demerouti (2007), individuals employ performance protection strategies to cope with environmental demands. Performance protection is achieved through the mobilization of sympathetic activation (autonomic and endocrine) and/or increased subjective effort (use of active control in information processing). As a result, the greater the activation or effort employed by the individual, the greater the physiological costs for the individual. The second psychological process is the motivational process in which job resources foster well-

being (e.g., engagement; Hakanen & Roodt, 2010). Job resources can play both an intrinsic and extrinsic motivational role within the JD-R model. According to Schaufeli and Bakker (2004) job resources may play an intrinsic motivational role since they fulfill basic human needs (e.g., need for autonomy, competence, and relatedness) and foster an individual's growth, learning, and development. On the other hand, job resources may play an extrinsic motivational role because they are instrumental in achieving work goals. Work environments offering many resources, foster an individual's willingness to dedicate his/her efforts and abilities to the work task. As a result, the likelihood of successfully completing the task and attaining the work goal increases. Regardless of the type of motivational role that job resources play, the presence of job resources leads to engagement, whereas their absence contributes to a cynical attitude towards work (Bakker & Demerouti, 2007).

In addition to the dual processes described above, the JD-R model also proposes that the interaction between job demands and job resources is important for the development of employee health (Bakker & Demerouti, 2007). First, the buffer hypothesis states that job resources may buffer the impact of job demands on job strain, including burnout. Properties of the work situation, as well as characteristics of the individual, can buffer the effects of a stressor via one of the following methods: (a) the buffering variable can reduce the tendency of organizational properties to generate specific stressors; (b) the buffering variable can alter the perceptions and cognitions evoked by such stressors; (c) the buffering variable can moderate responses that follow the appraisal process; or (d) the buffering variable can reduce the health-damaging consequences of such responses. According to Bakker and Demerouti, the

reason why a particular job resource can act as a buffer is different for different resources. Second, the coping hypothesis states that job resources particularly influence motivation or engagement when job demands are high. Resources become most salient under demanding conditions, and individuals will thus be more likely to use resources as a coping or stress-reducing mechanism under stressful conditions (Demerouti & Bakker, 2011).

Several studies have provided empirical evidence supporting the four propositions outlined in the JD-R model. A number of studies have supported the presence of the health impairment and motivational processes, and their ability to predict organizational outcomes (e.g., Bakker, Demerouti, & Verbeke, 2004; Demerouti, et al., 2001; Hakanen, Bakker, & Schaufeli, 2006; Hakanen, Schaufeli, & Ahola, 2008; and Schaufeli, Bakker, & van Rhenen, 2009). Taken together, these studies support the idea that job demands and resources are responsible for two different processes: job demands are related to strain (including a lack of energy and development of health issues) and job resources are related to motivation (including engagement and commitment). Two additional studies lend support to the buffer hypothesis, suggesting that job resources can counter the effect job demands on well-being (Bakker, Demerouti, & Euwema, 2005; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). In both studies, when the level of job resources was high, the effect of job demands on the core burnout dimensions was significantly reduced. Finally, two studies have supported the hypothesis that resources gain their salience in the context of high job demands or threats (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Hakanen, Bakker, & Demerouti, 2005). These studies suggest

that job resources particularly have an impact on work engagement under situations of high job demands.

While the JD-R model originally focused on job resources, more recent research has incorporated non-work related resources, or personal resources, into the model. Personal resources are aspects of the self that are generally linked to resiliency and refer to an individual's sense of their ability to control and impact upon their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003). Van den Heuvel and colleagues described personal resources in the following way: "Personal resources are lower-order, cognitive-affective aspects of personality; developable systems of positive beliefs about one's self (e.g., self-esteem, self-efficacy, mastery) and the world (e.g., optimism, faith) which motivate and facilitate goal-attainment, even in the face of adversity or challenge" (Van den Heuvel, Demerouti, Schaufeli & Bakker, 2010, p. 129). Similar to job resources, personal resources are (a) functional in achieving goals, (b) protect individuals from threats and the associated physiological and psychological costs, and (c) stimulate personal growth and development (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009a). Personal resources are not only related to stress resilience, but also have positive effects on physical and emotional well-being as well (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). Additionally, personal resources are malleable and open to change and development; as such, they can be influenced by significant life experiences and specific personal development interventions or coaching (Van den Heuvel, Demerouti, Schaufeli, & Bakker, 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009a).

Xanthopoulou and colleagues (2007) examined the role of three personal resources (self-efficacy, organization-based self-esteem, and optimism) in predicting exhaustion and work engagement. They found that personal resources partially mediated the relationship between job resources and work engagement, suggesting that job resources foster the development of personal resources. A second, longitudinal study conducted by Xanthopoulou and colleagues (2009a) suggests that personal resources are reciprocal with job resources and work engagement overtime. Specifically, job resources measured at time one were found to predict personal resources and engagement measured thirteen to nineteen months later, while initial levels of personal resources and engagement were found to predict job resources available at time two. Simbula, Guglielmi, and Schaufeli (2011) also found reciprocal relationships between job resources, personal resources, and engagement. Other personal resources that have been linked to employee well-being and engagement include the following: psychological capital (an individual's positive psychological state of development characterized by self-efficacy, optimism, hope, and resilience; Sweetman & Luthans, 2010; Van de Heuvel et al., 2010), meaning-making (the ability to understand why an event has occurred and its impact; Van de Heuvel et al.), self-regulatory promotion focus (the tendency to perceive the environment in terms of growth and development opportunities; Van de Heuvel et al.), core self-evaluations (a bottom-line appraisal of one's self-worth that includes self-esteem, generalized self-efficacy, locus of control, and emotional stability; Durán, Extremer & Rey, 2010), and emotional intelligence (a set of interrelated skills concerning the ability to accurately perceive, regulate, and express emotion; Durán, et al.).

In addition to the personal resources listed above, a few researchers have also begun to explore the relationship between personality and engagement. Currently, there are very few studies linking personality and engagement; most researchers have chosen to focus on more state-like personal resources as they are open to development and manageable for performance improvement (Bakker, 2009). However, Van den Heuvel and colleagues (2010) suggest that personality traits may play a role in influencing the ease with which state-like personal resources are developed. Langelan, Bakker, Van Dooren, and Schaufeli (2006) conducted a study among Dutch employees exploring the relationship between two Big Five personality traits and engagement. They found that engaged workers were characterized by low levels of neuroticism and high levels of extraversion. A second study by Mostert and Rothman (2006) replicated and expanded these findings within a large sample of South African police officers. They found that conscientiousness, emotional stability, and extraversion each made an independent contribution in predicting work engagement. Other researchers have looked at the relationship between other personality traits (outside of the Big Five) and engagement. Dikkers and colleagues found that proactive personality was associated with an increase in engagement 18 months later, suggesting that proactive personality is a personal resources with beneficial effects on employee's levels of work engagement (Dikkers, Jansen, de Lange, Vinkenburg, & Kooij, 2010). Additionally, Wefald, Reichard, and Serrano (2011) found that trait-like positive affect was positively related to engagement within a group of working professionals. Taken together, these studies suggest that both state- and trait-like personal resources play a crucial role in explaining work

engagement, since together with job demands and job resources, they contribute in explaining variance in exhaustion and engagement.

In addition to discussing the antecedents of engagement, the JD-R model also incorporates the consequences of engagement into its theoretical framework. The driving force behind the popularity of the engagement construct is that it has positive consequences for employees and organizations alike (Saks, 2006). According to Demerouti and Cropanzano (2010), there has been a dramatic increase in the number of studies showing a positive relationship between employee engagement and both in-role and extra-role performance. For example, Bakker, Demerouti, and Verbeke (2004) found that engaged Dutch employees received higher ratings from their colleagues on both in-role and extra-role performance, indicating that engaged employees perform well and are willing to go the extra mile. A study within a sample of American employees from a wide variety of industries and occupations found that engagement made a unique contribution (after controlling for job embeddedness) in explaining variance in job performance (Halbesleben & Wheeler, 2008). Furthermore, engagement has also been linked to academic performance as well. Schaufeli, Martínez, Pinto, Salanova, and Bakker (2002) found a positive relationship between engagement and the number of exams passed in a student sample from Spain, Portugal, and the Netherlands. Furthermore, higher levels of engagement also predicted future academic performance, as measured by a higher GPA in the following year (Schaufeli & Salanova, 2007).

Three other studies looking at daily and weekly job performance lend further support to these findings. First, Xanthopoulou, Bakker, Heuven, Demerouti, and

Schaufeli (2008) conducted a diary study within a group of flight attendants, exploring whether daily fluctuations in colleague support predict day-levels of job performance through self-efficacy and engagement. The flight attendants filled in a questionnaire and diary booklet before and after consecutive flights to three intercontinental destinations. The results indicated that work engagement mediated the relationship between self-efficacy and both in-role and extra-role performance. Correlations between engagement and in-role and extra-role performance were .58 and .39, respectively.

A second study conducted by Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009b) investigated how daily fluctuations in job resources are related to an employee's level of personal resources and work engagement, as well as daily financial returns. The study was conducted within a group of 42 employees working within three branches of a fast-food company. Employees completed a questionnaire and diary booklet over five consecutive work days. Xanthopoulou and colleagues found day-level job resources (autonomy, coaching, and team climate) had an effect on work engagement through day-level personal resources (self-efficacy, organization-based self-esteem, and optimism). Additionally, day-level coaching had a direct effect on work engagement, which predicted daily financial returns from the employee's shift. Finally, the previous days' coaching also had a positive, lagged effect on the next days' work engagement and financial returns as well.

A final study conducted by Bakker and Bal (2010) tested a model of weekly work engagement in a group of Dutch teachers. Teachers were asked to complete a questionnaire at the end of each week for five consecutive weeks, providing

information on their job resources, engagement levels, and performance. Results indicated that weekly job resources (autonomy, exchange with supervisor, and opportunities for development) were positively related to work engagement, which in turn, was positively related to teachers' self-ratings of both in-role and extra-role performance. While this is but a small sample of the research demonstrating the positive relationship between engagement and various measures of performance, further support is widely available within the research literature (e.g., Christian et al., 2011; Gorgievski, Bakker & Schaufeli, 2010; Halbesleben, 2010; Rich et al., 2010; Saks, 2006; and Schaufeli, Taris & Bakker, 2006).

The consequences of engagement go beyond job performance as well. Bakker (2010) comments, "Recent studies show that it is not only job performance in which engaged employees differ from others and excel. Engaged employees show a variety of behaviors that may be good for themselves and the organization at large" (p. 234). For example, engagement has been linked to active learning behavior, personal initiative, and innovation. An unpublished study by Bakker and Demerouti (2009) provided evidence linking engagement to supervisor ratings of active learning behavior. Engaged workers were more likely to learn new things through their work activities, search for task-related challenges, and seek out performance feedback from colleagues. Sonnentag (2003) lends further support to these findings, linking engagement to the pursuit of learning, as well as personal initiative and proactive behavior. A longitudinal study among Finnish dentists conducted by Hakanen, Perhoniemi, and Toppinen-Tanner (2008) found a positive relationship between engagement and personal initiative and innovation. Engaged dentists often did more

than what they were asked to do, constantly made improvements in their work, and gathered feedback and ideas for improvements from clients. Two additional studies conducted by Schaufeli, Taris, and Bakker (2006) and Gorgievski, Bakker, and Schaufeli (2010) provide further support for the relationship between engagement and innovativeness. A final study within a group of 750 young, Finnish managers conducted by Hyvönen, Feldt, Salmela-Aro, Kinnunen, and Mäkikangas (2009) found that engaged managers were eager to develop themselves on the job and to increase their occupational knowledge. They were also more likely to have positive attitudes towards modernization and increased productivity. Taken together, these findings suggest that engaged employees are not passive actors in their work environments, but rather actively strive to change their work environments.

Engagement has also been linked to other positive job attitudes such as job satisfaction and commitment, and intentions to remain with an organization. In one of the first empirical studies addressing the antecedents and consequences of engagement, Saks (2006) found that engagement was positively related to both job satisfaction ($r = .52$) and organizational commitment ($r = .53$). Hakanen, Bakker, and Schaufeli (2006) empirically tested the motivational process of the JD-R model within a group of Finnish teachers and found that engagement was linked to teachers' ratings of their commitment to the organization's mission and goals. In a second study in which they longitudinally tested the motivational process of the JD-R model, Hakanen, Schaufeli, and Ahola (2008) found that engagement levels of Finnish dentists predicted levels of organizational commitment measured three years later.

In addition to positive relationships with job satisfaction and organizational commitment, engagement is also significantly and negatively related to turnover (Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004). In his study, Saks (2006) found a significant, negative correlation between engagement and intentions to quit ($r = -.41$). Furthermore, Halbesleben (2010) conducted a recent meta-analysis on work engagement, summarizing the construct's relationships with job demands, job resources, and consequences within 74 unique samples. The results of the meta-analysis lend further support to the relationships between engagement and organizational commitment ($\rho = .38$) and turnover intentions ($\rho = -.26$). Taken together, these findings suggest that engaged workers are more satisfied with their jobs and more committed to their organizations. As a result, they are less likely to leave the organization and look for another job (Demerouti, et al., 2001; Schaufeli & Bakker, 2003, 2004b).

Engaged employees also enjoy good mental and psychosomatic health. A study conducted by Hallberg and Schaufeli (2006) within a sample of Information Communication Technology Consultants found that engagement was significantly and negatively related to the following health complaints: emotional exhaustion, cynicism, depressive symptoms, somatic complaints, and sleep disturbances. In his meta-analysis, Halbesleben (2010) also found that engagement was positively related to health outcomes ($\rho = .20$). Finally, Schaufeli, Bakker, and Van Rhenen (2009) conducted a two-wave longitudinal study with a one year time interval in a group of managers and executives of a Dutch telecom company looking at burnout, engagement, and sickness absenteeism. They found that engagement predicted

future absence frequency, leading to less frequent absences due to sickness. These findings suggest that engaged workers enjoy better health than their less engaged counterparts.

A final consequence of engagement that has been studied within the literature is safety. A recent meta-analysis conducted by Nahrgang, Morgeson, and Hofmann (2010) explored the relationships between job demands, job resources, burnout, engagement, and safety outcomes. They found that engagement was significantly, negatively related to adverse events (e.g., near misses, safety events, errors) and unsafe behaviors (e.g., absence of safety citizenship behaviors, negative health, and safety). Two additional studies conducted within the medical field lend further support to the relationship between engagement and safety. First, a study among residents within the Netherlands found that highly engaged residents reported fewer action/inexperience errors (e.g., performing procedures without proper training, mistakes with and without negative consequences for the patient) and fewer errors due to lack of time (e.g., discharging patients later than needed, not having enough time and attention for patients, and falling short on quality of care provided) (Prins, van der Heijden, Hoekstra-Weebers, Bakker, van de Wiel, Jacobs & Gazendam-Donofrio, 2009). A second study was conducted by Mark and colleagues using a large sample of nurses from the United States. The longitudinal, organizational study included nurses in 281 medical-surgical units in 143 general acute care hospitals. Mark and colleagues found that work engagement was positively related to safety climate. In addition, they found that the interaction between work engagement and safety climate significantly predicted the number of needle sticks, with the combination of high work

engagement and high safety climate predicting fewer needle sticks (Mark, Hughes, Belyea, Chang, Hofmann, Jones & Bacon, 2007). Taken together, these studies suggest that engaged workers perform more safe behaviors, resulting in fewer errors and injuries on the job.

Moving Engagement Research to a Higher Level

As illustrated by the studies discussed so far, most research on engagement has been conducted at the individual-level of analysis (Attridge, 2009; Macey & Schneider, 2008; Richardson & West, 2010). Macey and Schneider (2008) comment that the time has come to “add additional levels of analysis to the research repertoire” (p.26). Researchers and practitioners alike have noted that moving engagement research to a higher level (i.e., any meaningful unit above the individual level) seems to make sense. According to Pugh and Dietz (2008), an organizational level approach to engagement is consistent with the construct’s nomological network. Given that some of the antecedents (e.g., work conditions, leadership) and consequences (e.g., organizational effectiveness) of engagement are at the organizational level of analysis, it is logical to conceptualize the focal construct at the organizational level as well. Furthermore, it is the unit or organizational levels of analysis that businesses find most meaningful. Schneider and colleagues (2006) explained, “...we are always concerned with an engaged workforce, not an engaged individual one at a time. In an era when teams and work groups have become so important to the success of the company, it is what happens in those work groups and teams that is critical” (p. 5). For practitioners, unit level performance is the barometer of success; managers and leaders focus on unit characteristics and outcomes such as store sales, customer

satisfaction, and return on investment (Pugh & Dietz, 2008). In addition, focusing engagement research on higher levels of analysis provides opportunities to establish linkages to outcomes that are directly relevant to most businesses (e.g., customer loyalty, profitability, productivity, turnover, safety; Harter, Schmidt & Hayes, 2002).

Crossover of Engagement

According to Richardson and West (2010), multi-level theory suggests that higher level phenomena, in this instance group or team engagement, can emerge from the social interactions, behaviors, affects, and cognitions of individuals. Because engagement has a strong affective component, including positive affect, energy, absorption, and passion, it can be viewed as similar to the idea of collective mood (Kelly & Barsade, 2001; Pugh & Dietz, 2008; Totterdell, 2000). According to Totterdell (2000), there are two obvious ways a team or work group could gain collective mood. First, it is possible that team members could respond similarly to shared events, and therefore, end up feeling the same way (e.g., either burned out or engaged with their work). Some researchers (e.g., Westman, 2002) have argued that these shared events represent spurious causes of what seems to be crossover, and thus, should be considered third variables. Second, team members could affect each others' moods so that their moods converge through a process known as emotional contagion. According to Barsade (2002), emotional contagion refers to "a process in which a person or group influences the conscious or unconscious induction of emotion states and behavioral attitudes" (p. 646). Thus, emotional contagion is a type of social influence that can occur at both subconscious and conscious levels.

Several studies, both in experimental and field settings, have documented that the emotional contagion phenomenon does in fact exist. Barsade (2002) conducted a lab study examining the transfer of moods among people in a group and its effect on group performance. The study used a trained confederate to enact mood within the group. The results indicated that the pleasant mood of the confederate influenced (video coders' ratings of) the mood of other team members during a leaderless group discussion. As a result of this positive mood contagion, the group exhibited more cooperative behavior and better performance on the task. A second lab study conducted by Sy, Cote, and Saavedra (2005), supported and extended these findings. They found that when leaders were in a positive (vs. negative) mood, individual team members also experienced more positive and less negative mood. Groups with leaders in a positive mood exhibited more coordination and expended less effort than did groups with leaders in a negative mood.

In addition to these studies, other researchers have focused their attention on emotional contagion in the workplace, viewing it as a reciprocal emotional reaction among employees who closely collaborate. For example, Totterdell, Kellet, Teuchmann, and Briner (1998) found evidence that the moods of teams of nurses and accountants were related to each other, even after controlling for shared work events. Additionally, Schaufeli and colleagues have explored socially induced burnout within different occupational groups. In one study, Bakker and Schaufeli (2000) found that teachers who frequently had conversations with their burned-out colleagues about problematic students had the highest probability of catching the negative attitudes expressed by their colleagues. In trying to repeatedly understand the problems their

colleagues were facing, Bakker and Schaufeli speculated that the teachers had to tune into the negative attitudes their colleagues expressed about themselves and their students. A second study by Bakker, Le Blanc, and Schaufeli (2005) supported and extended these findings of burnout contagion within the work environment. They conducted a study of nurses from 80 European intensive care units and found both direct and indirect routes to socially induced burnout. In addition to the direct effect from unit burnout to individual nurses burnout, unit burnout also had an indirect effect through its influence on the workload and job autonomy of individual nurses. Because of the impaired job performance of their burned-out colleagues, individual nurses had more work to do. Therefore, burnout at the team level was related to individual team members' burnout scores, both directly and indirectly, through its relationships with individual members' job demands, job control, and perceived social support.

Given evidence supporting the notion of socially induced burnout and the relationship between burnout and engagement, it is likely that engagement may also be viewed as contagious. In fact, there have been a couple studies within the research literature to support this assertion. Bakker, van Emmerik, and Euwema (2006) conducted a study among 2,229 Royal Dutch Constabulary Officers (a police organization with military status) working in one of 85 teams. Controlling for individuals' job demands and resources, they found that team-level engagement was related to individual team members' engagement. Officers who worked in highly engaged work teams reported having higher levels of vigor, dedication, and absorption themselves, independent of work conditions. Engaged workers who communicated their optimism, positive attitudes, and proactive behaviors to their colleagues, created

a positive team climate. A second study conducted by Bakker and Xanthopoulou (2009) explored the crossover of engagement in a sample of 62 employee dyads. They hypothesized that work engagement would crossover from an employee (the actor) to a colleague (the partner) on a daily basis. Additionally, it was expected that the frequency of daily communications would moderate the crossover of daily work engagement, which would also relate to the colleagues' daily performance. The results confirmed the crossover of daily work engagement, but only on days when the individuals within the dyad communicated frequently. They also found that when the actor's work engagement (particularly vigor) was frequently communicated, there was a positive indirect relationship with the partner's performance through the partner's work engagement. In other words, when the actor's vigor is communicated to the partner, the partner's vigor is enhanced and leads to high performance.

In addition to these studies, there has also been evidence to suggest that work engagement can crossover to others outside of the work environment as well. Bakker, Demerouti, and Schaufeli (2005) looked at the transference of engagement in working couples. Within a sample of Dutch dual-earner couples, they found evidence for the crossover of engagement among partners, after controlling for both job and home demands and resources. More specifically, they found that wives' vigor and dedication significantly and uniquely predicted their husbands' levels of vigor and dedication. The same was also true for husbands' vigor and dedication crossing over to their wives. A second study by Bakker, Shimazu, Demerouti, Shimada, and Kawakami (2011) supported and extended these findings within a sample of Japanese couples. They hypothesized that perspective taking, the spontaneous tendency to

adopt the psychological perspective of other people, would moderate the crossover of work engagement within the couples. The moderating relationship of perspective taking was supported, but only for women. When women took the perspective of their partner, they scored higher on engagement with increasing partner engagement. Furthermore the results indicated that engagement crossover was strongest when both men and women were high, as opposed to low, in perspective taking.

From this line of research, it is apparent that collegial relationships hold the potential for social contagion (Leiter & Bakker, 2010). Evidence to date suggests that both burnout and the related concept of engagement can be socially induced and should be viewed as contagious processes. As a result, engaged individuals can influence the engagement levels of others, and this in turn, can impact group behavior and performance. Barsade accurately summarized the process, commenting:

“The results of this research confirm that people do not live on emotional islands but, rather, that group members experience moods at work, these moods ripple out and, in the process, influence not only other group members’ emotions, but their group dynamics and individual cognitions, attitudes and behaviors as well. Thus, emotional contagion, through its direct and indirect influence on employees’ and work teams’ emotions, judgments, and behaviors, can lead to subtle but important ripple effects in groups and organizations” (2002, p. 670).

The remainder of this section will focus on the impact that unit or work group engagement can have on organizational outcomes.

Consequences of Unit Level Engagement

One of the earliest and most definitive pieces of practitioner literature on employee engagement is a study conducted by Harter, Schmidt, and Hayes (2002) linking business unit engagement to business unit outcomes. Harter and colleagues

conducted a meta-analysis based on 7,939 business units in 36 companies to examine the relationship between what they refer to as “employee satisfaction-engagement” and the following business unit outcomes: customer satisfaction, productivity, profit, employee turnover, and safety. The Gallup Workplace Audit (GWA) was used to measure engagement at the individual level. The GWA consists of one item assessing overall satisfaction and 12 items measuring employee perceptions of work characteristics (referred to as the Q12) to assess engagement. The results of the meta-analysis revealed the following true score correlations with engagement: customer satisfaction-loyalty $\rho = .33$; turnover $\rho = -.30$; safety (measured as the percentage of work days lost due to a safety incident) $\rho = -.32$; productivity $\rho = .25$; and profitability $\rho = .17$. The strongest effects were found for employee turnover, safety, and customer satisfaction-loyalty. While positive and in the expected direction, the correlations for productivity and profitability were of lower magnitude. Harter and colleagues suggested that this could be due to the fact that productivity and profitability are more remote downstream variables; as such, they may be influenced by many other factors or variables, and only indirectly influenced by employee attitudes. Based upon the findings from their meta-analysis, Harter, Schmidt, and Hayes concluded the following: “...employee satisfaction and engagement are related to meaningful business outcomes at a magnitude that is important to many organizations and that these correlations generalize across companies” (2002; p. 276).

Since publishing their meta-analysis, Harter and colleagues have continued to update their findings. In Harter, Schmidt, Killham, and Agrawal (2009), the group

published their seventh iteration, encompassing 199 research studies across 152 organizations, within 44 industries and 26 countries. With this updated meta-analysis, the group expanded their sample to 32,394 business units, including 955,905 individual employees. Harter and colleagues also collected additional business unit outcomes, including: customer loyalty-engagement, profitability, productivity, turnover, safety incidents, shrinkage, absenteeism, patient safety incidents, and quality defects. Once again, the results of the updated meta-analysis provided evidence linking employee engagement with each of the nine performance outcomes studied. True score correlations with engagement were as follows: customer loyalty-engagement $\rho = .30$; profitability $\rho = .14$; productivity $\rho = .22$; turnover $\rho = -.23$; safety incidents $\rho = -.22$; absenteeism $\rho = -.26$; shrinkage $\rho = -.13$; patient safety incidents $\rho = -.40$; and quality defects $\rho = -.25$. In addition, Harter and colleagues looked at the relationship between employee engagement and a composite measure of performance and found a true score correlation of .48 between the two variables. The findings from this study both replicated and extended the findings from the original meta-analysis.

According to Shuck and Wollard (2010), the work of Harter and colleagues was a catalyst for the rapid expansion of interest in engagement, as it was the first widely disseminated publication to suggest an engagement-profit linkage. However, other researchers have criticized this body of work for a couple key reasons. First and foremost, although the Q12 is called a measure of engagement, the construct of engagement itself is not being assessed. The GWA/Q12 was designed to reflect two broad categories of employee survey items: those measuring attitudinal outcomes (e.g., satisfaction, loyalty, pride) and those measuring or identifying issues within a

manager's control that are antecedents to attitudinal outcomes. Harter and colleagues argue that employees become more cognitively and emotionally engaged when their basic needs are met; as such, the GWA/Q12 assesses basic needs within the workplace. Items included in the measure cover the following workplace needs: clarity of expectations, access to basic materials and equipment, making a contribution to the organization, frequent and immediate recognition for good work, relationships, developmental opportunities, a sense of belonging, having opinions heard/involvement in decision making, connection between work and a larger meaningful mission/purpose, friendships at work, and opportunities to discuss progress and growth (Harter, Schmidt, & Keyes, 2003). In sum, the Q12 measure comprises "engagement conditions," each of which is a causal contributor to engagement, and the composite or sum of which is said to measure engagement through the measurement of its causes (Harter & Schmidt, 2008).

Macey and Schneider (2008) describe the Q12 as a measure of the conditions under which people work, but one where the actual state of engagement is not assessed. They conceptually argue that any measure asking about the presence of or an employee's satisfaction with the conditions at or of work is not assessing any of the three facets of the engagement construct. Schaufeli and Bakker (2010) have similarly commented that the Q12 taps an employees' perceived level of job resources and not his or her level of engagement with work. They also note the awkwardness of Gallup's definition of engagement, in which job satisfaction is considered a hallmark of engagement. In fact, the correlation between the overall job satisfaction item and the Q12 is very high ($r = .77/r = .91$ after controlling for measurement error). In addition,

both engagement (as measured by the Q12) and the overall job satisfaction question have identical correlations with the composite measure of business unit performance. As a result, Gallup's engagement construct has a great deal of overlap with job satisfaction.

A second criticism that Harter and colleagues' work has faced deals with multi-level issues. Within their series of meta-analyses, employee engagement is measured at the individual level. The Q12 score is then averaged across employees within each unit to arrive at the business unit engagement score. However, when conducting multi-level research, it is important that data aggregation be guided by composition theory. Pugh and Dietz (2008) commented, "Adequate composition theory is needed, something often lacking in existing work (e.g., Harter et al., 2002)" (p. 46). It is important to first consider whether data at one level of analysis can be appropriately aggregated to a higher level of analysis. It is then appropriate to follow up with statistical justification for aggregation (Salanova, Agut, & Peiró, 2005). This is done by calculating within-unit agreement (e.g., intraclass correlation coefficients (*ICCs*) or within-group interrater agreement (r_{wg})) to justify the appropriateness of aggregating individual data to the unit level (Pugh & Dietz, 2008). Only then is it appropriate to measure a construct at the individual level and aggregate those individual level responses to the group or organizational level of analysis. Such analysis is missing within the work conducted by Harter and colleagues.

Two other studies have examined the consequences of unit-level engagement, addressing the limitations identified in Harter and colleagues' body of research. In the first study, Salanova, Agut, and Peiró (2005) examined the role of service climate in

predicting employee performance and customer satisfaction. More specifically, they explored the mediating role of service climate between a pair of antecedents (i.e., organizational resources and engagement) and customers' perceptions and attitudes (i.e., employee performance and customer loyalty). Salanova and colleagues used a sample of contact employees from 114 service units (58 hotel front desks and 56 restaurants). A sample of three employees and ten customers from each work group participated in the study. The employee sample consisted of 342 employees (174 from reception work units of the hotel and 168 working as servers in restaurants). Customers consisted of 1,140 clients from the 114 service units. Hotel customers were only included if they stayed more than three nights at the hotel, while restaurant customers had to eat lunch or dinner at the restaurant to be included. The employee sample provided information on their organizational resources and engagement levels, while the customers provided information on the employees' performance and their own satisfaction with the service they received from the employees.

Engagement was measured at the individual level using the Spanish version of the UWES. Salanova and colleagues used the following aggregation indices to statistically justify aggregating the employee data to the service unit level: intraclass correlation coefficients ($ICC(1)$ and $ICC(2)$), within-group interrater agreement (r_{wg}), and average deviation indexes ($ADIs$). Overall, the group found sufficient statistical support to aggregate the scores of the study variables at the work unit level. In terms of the study results, engagement was positively related to both organizational resources (mean $r = .30$) and service climate (mean $r = .31$), with the dedication facet of engagement having the strongest correlation with service climate ($r = .52$).

Structural equation modeling analyses indicated that service climate fully mediated the relationship between organizational resources and engagement (as report by employees) on the one hand and employee performance (as assessed by customers) and customer loyalty on the other. The research conducted by Salanova and colleagues empirically demonstrated that at the work unit level, engagement contributes to improved shared service climate among service units. In addition, the use of aggregated scores and structural equation modeling sets the study apart from previous work in this area.

A second and more recent study by Torrente, Salanova, Llorens, and Schaufeli (2012) examined the mediating role of team work engagement between team social resources (i.e., supportive team climate, coordination, teamwork) and team performance (i.e., in-role and extra-role performance). This study included a convenience sample of 533 employees nested within 62 teams (with 62 team supervisors) from 13 organizations. Each team had an average of approximately nine members ($M = 8.6$). Torrente and colleagues took a different approach to assessing team level engagement. The group conceptualized team work engagement as, “a positive, fulfilling, work-related and shared psychological state characterized by team work vigor, dedication and absorption which emerges from the interaction and shared experiences of the members of a work team” (p. 107). They assessed team work engagement by nine items validated for aggregated data at the team level (Torrente, Salanova, Llorens, & Schaufeli, in press). Each of the three dimensions was assessed by a scale consisting of three items, for example: team work vigor – *While working, my team feels full of energy*; team work dedication – *My team is enthusiastic*

about the task; and team work absorption – *While working, we forget everything else around us*. Team performance was assessed by supervisor ratings using two different scales, one assessing in-role performance and the other assessing extra-role performance, each with three items.

Before analyzing the results, Torrente and colleagues (2012) looked at the agreement of employee perceptions within the teams using various indices (i.e., *ICC(1)*, *ICC(2)*, *ADI*, and *ANOVA*). Overall aggregation results indicated within-group agreement in the teams so that unit members' perceptions could be aggregated. As expected, SEM analyses revealed that team work engagement did in fact mediate the relationship between resources perceived at the team level and performance as assessed by the team supervisor. More specifically, team social resources had a positive and significant influence on team work engagement ($\beta = .73$, $p < .001$), which in turn was positively and significantly associated with team performance ($\beta = .29$, $p < .05$). Team social resources explained 53% of the variance in team work engagement ($R^2 = .53$) and this in turn accounted for 8.4% of the variance in team performance ($R^2 = .08$). This study by Torrente and colleagues was the first to empirically test the positive, motivational path of the JD-R model at the collective, team level. Although the underlying crossover mechanism was not revealed by the findings, the group hypothesized that emotional contagion was the explanatory mechanism responsible for employee agreement within the teams.

The Current Study

To date, very little research on engagement has been conducted at higher levels of analysis. In addition to Macey and Schneider (2008), others have stressed

the importance of adding additional levels of analysis to engagement research. Demerouti and Bakker (2011) commented, the “advantages of integrating multilevel constructs in research are that they can help to capture the complexity of organizational phenomena and develop more sophisticated theoretical models” (p. 4). Thus, moving engagement research to a higher level will result in a better understanding of the psychological phenomena unfolding within organizations and help to guide the development of more effective interventions. The purpose of the current study is to answer this call for research by investigating the relationship between work unit engagement and business metric outcomes. The aims of this project are six-fold: first, to explore the factor structure of the engagement index; second, to explore the discriminant validity between engagement and two common job attitudes (job satisfaction and organizational commitment) in terms of factor structure; third, to explore the usefulness of various composition models for aggregating individual-level engagement up to the unit level; fourth, to illustrate the relationship between unit-level engagement and work unit turnover and performance metrics (operating costs and earnings); fifth, to explore the discriminant validity between engagement and two common job attitudes (job satisfaction and organizational commitment) in terms of predictive uniqueness; and finally, to explore whether work unit engagement mediates the relationship between past and future performance.

With regard to the first project aim, the factor structure of the engagement index used in the current study has yet to be explored. The engagement index used here was developed to be consistent with Schaufeli and colleagues’ three-part conceptualization of engagement, containing subscales assessing the absorption

(cognitive), dedication (emotional), and vigor (physical) components of the construct. As noted earlier, although there are a few exceptions (e.g., Sonnentag, 2003; Wefald & Downey, 2009), in most cases the three-factor model of Schaufeli's UWES is slightly superior to a one-factor model (Nerstad et al., 2010; Schaufeli & Bakker, 2003; Schaufeli & Bakker, 2004; Schaufeli, Martinez, Marques Pinto, Salanova, & Bakker, 2002; Seppälä, Mauno, Feldt, Hakanen, Kinnunen, Tolvanen, & Schaufeli, 2009). Yet, research has also indicated that the three engagement factors are highly correlated, suggesting that the total score for work engagement may be more useful for research purposes (Bakker & Demerouti, 2008; Nerstad et al., 2010; Schaufeli & Bakker, 2003; Schaufeli & Bakker, 2010; and Schaufeli & Salanova, 2007). Because the engagement index has yet to be used for empirical research purposes, no formal hypothesis is proposed for this project aim, but it will instead be investigated in an exploratory manner.

Research Question 1: What is the factor structure (one-factor vs. three-factor) of the engagement index?

The second aim of this study is to explore the discriminant validity of engagement with job satisfaction and organizational commitment in terms of factor structure. Distinguishing engagement from existing job attitudes has been a recent focus within the literature (e.g., Christian, Garza & Slaughter, 2011; Hallberg & Schaufeli, 2006) and has yielded evidence to support the distinctiveness of the engagement construct. For example, Christian and colleagues (2011) reported that the corrected mean correlations of engagement with job satisfaction, organizational commitment, and job involvement ranged between .52 and .59, providing evidence of

discriminant validity. Further, Hallberg and Schaufeli (2006) reported latent intercorrelations between engagement, job involvement, and organizational commitment ranged between .35 and .46, indicating between 12 and 21% shared variance. The research literature appears to be lacking a confirmatory factor analytic study exploring the relationships between engagement, job satisfaction, and organizational commitment. Given the findings discussed above, it is expected that factor analytic results will provide further evidence to differentiate engagement from the job attitudes of satisfaction and commitment.

Hypothesis 1: A three-factor model that distinguishes between the three constructs (engagement, job satisfaction, and organizational commitment) will fit the data better than an undifferentiated one-factor model.

The third aim of this study is to explore the usefulness of various composition models for aggregating individual-level engagement up to the unit-level. When conducting multi-level research, it is important that data aggregation be guided by composition theory. According to Chan (1998), “composition models specify the functional relationships among phenomena or constructs at different levels of analysis (e.g., individual level, team level, organizational level) that reference essentially the same content but that are qualitatively different at different levels” (p. 234). Based on Chan’s typology of composition models, the direct consensus model, in which the meaning of the higher level construct is in the consensus among lower level units, has been used most often in the study of engagement at higher levels of analysis. Within the direct consensus model, individual-level responses on an engagement measure are used to operationalize employee engagement, whereas the mean of those

individual responses within the work unit are used to operationalize work unit engagement. Within unit agreement is then the precondition for combining the individual-level engagement scores to represent the work unit engagement scores. The work conducted by Salanova and colleagues (2005) and Torrente and colleagues (2012) used such procedures for measuring work unit engagement. In both cases, aggregation results indicated sufficient within-unit agreement in engagement scores, providing justification for aggregating the individual level engagement scores. The current study includes the direct consensus model as one conceptualization of work unit engagement.

While most researchers and practitioners conceptualize unit-level engagement by taking the unit's average engagement score, there are other methods which could be used to conceptualize engagement at the unit level. For example, unit-level engagement could be represented by using dispersion, the highest/lowest score in the group, or the median. To date, alternative methods of conceptualizing unit-level engagement have yet to receive attention within the research literature (Van Rooy, Whitman, Hart, & Caleo, 2011). As a result, the current study explores two alternative strategies for conceptualizing unit-level engagement – the lowest and highest unit engagement scores. The following research question will be investigated in relation to the fourth study aim.

Research Question 2: What engagement composition model (the average, highest score, or lowest score) results in the highest correlation with the outcome variables?

The fourth aim of this study is to investigate the relationship between work unit engagement and the following business unit outcomes: turnover, operating costs, and earnings. Looking first at turnover, several studies conducted at the individual level of analysis have found a significant, negative relationship between engagement and turnover intentions (e.g., Hallberg & Schaufeli, 2006; Saks, 2006; and Schaufeli & Bakker, 2004). In addition, the results of a meta-analysis conducted by Halbesleben (2010) further support this negative relationship. Finally, there has also been evidence to support the negative relationship between engagement and turnover at the unit level of analysis. In their first meta-analysis, Harter and colleagues (2002) found a true score correlation between work unit engagement and turnover of $-.30$. The updated analysis by Harter and colleagues (2009) also found a significant negative correlation between engagement and turnover, although the magnitude of the correlation was slightly smaller ($\rho = -.23$). Based upon these findings, it is expected that there will be a significant, negative correlation between work unit engagement and work unit turnover.

Hypothesis 2: Work unit engagement will be negatively related to work unit turnover.

Research Question 2a: Which engagement composition score relates most strongly to turnover?

To date, there have not been any studies within the engagement literature exploring the relationship between engagement and operating costs. Despite this fact, there is still reason to believe that these variables are related. Several studies have linked engagement to personal initiative and innovativeness. Hakanen and colleagues

(2008) found that engaged dentists made improvements in their work and gathered feedback and ideas for improvement from their clients. A second study conducted by Hyvönen and colleagues (2009) found that engaged managers were eager to develop themselves, wanted to increase their occupational knowledge, and had positive attitudes towards modernization and increased productivity. Behaviors like these suggest that engaged employees are not passive actors in their work environments, but instead actively strive to change their work environments. As such, it seems likely that engaged employees would look for ways to keep operating costs down within their work groups, perhaps by cutting down on needless spending and making full use of the resources provided to them. As such, it is expected that there will be a negative relationship between engagement and operating costs.

Hypothesis 3: Work unit engagement will be negatively related to work unit operating costs.

Research Question 2b: Which engagement composition score relates most strongly to work unit operating costs?

There has been some evidence linking engagement to financial returns and profitability. Xanthopoulou and colleagues (2009b) found that an individual's day-level work engagement was related to daily financial returns (the total amount of money earned within a particular shift). In addition, the meta-analyses conducted by Harter and colleagues also explored the relationship between engagement and financial outcomes at the unit level. In the first meta-analysis, Harter and colleagues (2002) found a true score correlation between engagement and profitability of .17, as well as a true score correlation of .25 between engagement and productivity (the majority of

variables included within this category were financial measures of sales or revenue or growth in sale or revenue). A follow up meta-analysis conducted by Harter and colleagues in (2009) found similar relationships, although they were slightly lower in magnitude (engagement/profitability $\rho = .14$; engagement/productivity $\rho = .22$). Based upon these findings, it is expected that there will be a positive relationship between engagement and work unit earnings.

Hypothesis 4: Work unit engagement will be positively related to work unit earnings.

Research Question 2c: Which engagement composition model relates most strongly to work unit earnings?

In addition to looking at the relationship between overall engagement and the business metric outcomes, should a three-factor model of engagement fit the data, additional analyses will be conducted to explore the relationship of each of the three engagement facets with the business metrics outcomes. In his meta-analysis, Halbesleben (2010) looked at the relationships between demands, resources, and outcomes for overall engagement, as well as each of the three engagement facets. For commitment, the true score correlations were as follows: vigor $\rho = .31$; dedication $\rho = .52$; absorption $\rho = .44$. True score correlations for performance were only obtained for vigor and dedication; they were $\rho = .29$ and $\rho = .27$, respectively. Finally, for turnover intention the true score correlations were as follows: vigor $\rho = -.25$; dedication $\rho = -.45$; and absorption $\rho = -.30$. Based upon these relationships we would expect to see similar relationships between the engagement facets and business outcomes in the current study.

Hypothesis 5: Dedication will be negatively related to turnover and operating costs, and positively related to earnings.

Hypothesis 6: Absorption will be negatively related to turnover and operating costs, and positively related to earnings.

Hypothesis 7: Vigor will be negatively related to turnover and operating costs, and positively related to earnings.

Research Question 2d: Which composition model is most appropriate for conceptualizing the engagement facets – dedication, absorption, and vigor?

Finally, it is possible that some of the engagement facets may be better at predicting the financial outcomes and turnover than others. Demerouti and Cropanzano (2010) suggested that the vigor aspect of work engagement was the most crucial for performance. Among the three burnout dimensions, exhaustion (or lack of vigor) showed the most consistent pattern of (detrimental) relationships with performance. In addition, other studies have shown vigor, as assessed by the Profile of Mood States (POMS) vigor subscale, predicts both sports and academic performance (Shirom, 2010). In line with this research, it is likely that vigor will be the best predictor of earnings, a financial indicator of performance. In terms of turnover, the results of Halbesleben (2010) discussed above found that the dedication facet of engagement had the strongest true score correlations with both commitment and turnover intentions. As a result, it is likely that dedication will be the best predictor of turnover.

Hypothesis 8: The vigor aspect of work engagement will be the strongest predictor of earnings.

Hypothesis 9: The dedication aspect of work engagement will be the strongest predictor of turnover.

The fifth aim of the current study is to explore the discriminant validity between engagement and two common job attitudes (job satisfaction and organizational commitment) in terms of predictive uniqueness. Within the research literature, there has been some evidence to support the distinctiveness of the engagement construct in its ability to predict performance outcomes. For example, Rich and colleagues (2010) found that engagement had a stronger correlation with both task performance and organizational citizenship behaviors than did either job satisfaction or job involvement. A second study conducted by Christian and colleagues (2011) looked at the incremental validity of engagement in predicting both task and contextual performance over job satisfaction, organizational citizenship, and job involvement. In both cases, engagement explained incremental variance above the other job attitude measures. Yet other research has provided evidence to reaffirm the importance of both organizational commitment and job satisfaction. Hallberg and Schaufeli (2006) found that while engagement was related to turnover intentions, organizational commitment was a stronger predictor of the construct. Using dominance analysis, Dalal and colleagues (2009) found that while engagement made a greater contribution to the prediction of organizational citizenship and counterproductive work behaviors, job satisfaction made a slightly greater contribution to the prediction of task performance. In all three instances, both engagement and job satisfaction made a greater contribution to the prediction of these performance outcomes than organizational commitment. The current study seeks to further explore this line of

research by comparing engagement to job satisfaction and organizational commitment in its ability to predict unit performance and turnover.

Research Question 3a: Is engagement a stronger predictor of performance (operating costs and earnings) and turnover than job satisfaction and organizational commitment?

The final aim of the current study is to explore whether unit-level engagement mediates the relationship between past and future turnover/performance. To date, there have not been any studies conducted to address this question. Because this has not been formally investigated within the research literature, no formal hypothesis is proposed for this project aim, but it will instead be investigated in an exploratory manner.

Research Question 4: Does unit-level engagement mediate the relationship between past and future turnover and performance?

CHAPTER 2

METHOD

Participants

The sample for this study consisted of employees from a mid-sized (16,000+) retail organization with locations across North America. A total of 12,074 employees participated in the organization's engagement survey, yielding a 75% response rate. Of the completed surveys, data from 10,388 employees were linked with data from the company's Human Resources Information System (HRIS), which was necessary to determine the individual's work unit. Finally, to be included in the study, employees needed to complete the survey in English. This yielded a final sample of 10,322 employees. Of those employees, a majority held non-supervisory positions, worked full-time, and had been with the organization for ten or less years. The sample was predominately male (69.5% vs. 26.1% female). A total of 54.8% of employees were hourly, while 43.1% were salaried. Additional demographic information on the individual-level sample is presented in Table 2.

In order to look at work unit outcomes, the 10,322 employees were grouped into their respective work units. The unit-level sample consisted of 1,058 financial reporting units (FRUs). On average, each work unit had approximately 10 individuals who completed the survey ($M = 9.59$; $SD = 33.2$). To be included in the unit-level analyses, a FRU needed to have at least five individuals from the unit who completed the engagement survey and a participation rate of greater than or equal to 50%. This resulted in a total of 439 units which were included in the analyses. Table 3 provides additional demographic information at the work unit level.

Procedure

Data for the current study was collected from a client engagement survey conducted by a large human capital consulting firm in April of 2009. The engagement survey consisted of nine demographic items and 73 items assessing engagement and the drivers of engagement (e.g., job characteristics, relationships, rewards and benefits, learning and development, organizational environment). Employees were able to complete the survey via one of two methods – online or paper and pencil. A majority of survey participants (92%) completed the survey using the online option. While the survey was offered in three languages (i.e., English, French, Spanish), all participants included in the final sample completed the English version of the survey. Participants were provided with a unique personal identification number so that their survey responses could be linked with the organization's HRIS data to determine work unit membership.

Performance data (financial and turnover metrics) were provided by the organization for both the year prior to and the year following the survey (2008 and 2009 fiscal years; the organization's fiscal year runs from February 1st to January 31st). Performance data was provided for each financial reporting unit within the organization; however, not all FRUs within the organization were considered to be profit centers (e.g., those fulfilling corporate or administrative functions). When conducting the analyses on the financial metrics, only those units considered to be profit centers (i.e., field operations, headquarters operations, and sales), and therefore having influence on upon unit financial metrics, were included.

Measures

Engagement. Engagement was assessed by 20 items developed for use in the consulting firm's engagement index. The measure was developed to assess the extent to which employees are passionate and enthusiastic about their work; devoted to getting the job done right; immersed fully in the task at hand; focused and concentrate intensely while on the job; and driven to do whatever it takes to complete the task. The measure was developed to be consistent with Schaufeli's three-part conceptualization of engagement, including items created to reflect absorption, dedication, and vigor. All items were measured using a five-point Likert scale, on which employees indicated the extent to which they agreed or disagreed with each item.

Because the organization in the current study was one of the first to use the engagement index, additional analyses were performed to further refine the engagement measure. A Q-sort analysis was performed to assess the suitability of each item in the measure. A total of 22 Masters- and Ph.D.-level I/O psychologists were asked to classify each item into one of four categories: vigor (physical component), dedication (emotional component), absorption (cognitive component) or none of the above. Consistent with Hinkin's (1998) guidelines, only items that were correctly classified by at least 75% of the sample were retained. After completing this analysis, a total of 15 items remained: 4 items for vigor, 7 items for dedication, and 4 items for absorption.

Reliability analyses and inter-item correlations were performed on the 15 remaining items from the engagement index. Two additional items were dropped on

the basis of this analysis. First, one item from the absorption scale was dropped due to a low item-total correlation with the other items on the absorption scale. Second, one item from the vigor scale was dropped due to a high correlation ($r = .70$) with the dedication scale. The final engagement index consisted of 13 items – 3 items for vigor, 7 items for dedication, and 3 items for absorption. Coefficient alphas for the overall scale and each of the three facets were as follows: total scale $\alpha = .86$, vigor $\alpha = .65$, dedication $\alpha = .84$, and absorption $\alpha = .76$.

Organizational Commitment. Organizational commitment was assessed using the consulting firm's 10-item workforce commitment index. The items included in the workforce commitment index were consistent with the affective commitment dimension of Meyer and Allen's three component conceptualization of organizational commitment (Meyer & Allen, 1991; Meyer & Allen, 1997). Similar to the engagement index, all commitment items were measured using a five-point Likert scale, on which employees indicated the extent to which they agreed or disagreed with each item. Coefficient alpha for the workforce commitment index was $\alpha = .90$.

Job Satisfaction. Because the engagement survey did not contain an overall measure of job satisfaction, a proxy measure was created by identifying items which assessed each of the five facets of job satisfaction measured by the Job Descriptive Index (Smith, Kendall, & Hulin, 1969). Two to three items were selected to assess each of the following facets: work, supervision, coworkers, pay, and promotion. The final job satisfaction scale used in the current study contained 11 items. All items were measured using a five-point Likert scale, on which employees indicated the

extent to which they agreed or disagreed with each item. Coefficient alpha for the job satisfaction index was $\alpha = .87$.

Turnover metrics. The organization provided information on employees leaving each work unit. Information provided included the following: beginning count of individuals in the work unit, ending count of individuals in the work unit, number of voluntary turns, number of involuntary turns, number of layoffs, and total turnover count (consisting of voluntary turns, involuntary turns, and layoffs). For the purpose of the current study, turnover analyses were restricted to voluntary turnover. To calculate the percentage of voluntary turnover, the turnover variable was divided by the average of the beginning and ending count of individuals in the work unit (e.g., total voluntary turnover percentage = total voluntary turnover count/average of begin and end count).

Financial metrics. Information on three different financial metrics were provided by the organization: net sales, operating costs, and earnings.

Net Sales. Net sales represent the sales generated by the company after the deduction of returns, allowances for damaged or missing goods, and any discounts allowed. As such, this metric represents the operating revenues earned by the company from the sale of its products. Information on net sales was provided for each work unit in U.S. Dollars. While not used as a separate metric in the current study, net sales was used in the calculation of operating costs for the work units. In addition, the net sales variable was also used as an inclusion criterion for the financial analyses. To be included in the financial analyses, a unit had to have a positive net sales value, which indicated that the unit was considered a profit center.

Operating Ratio – SG&A. Selling, general and administrative expenses are the sum of all direct and indirect selling expenses and all general and administrative expenses of the company. SG&A expenses consist of the combined costs of operating the company. Selling expenses consist of the cost of sales, which include salaries, advertising expenses, manufacturing costs, rent and all expenses and taxes directly related to producing and selling its products. General expenses consist of general operating expenses and taxes that are directly related to the general operation of the company, but do not relate to the other two categories. Finally, administrative expenses consist of executive salaries, general support, and all associated taxes related to the overall administration of the company. SG&A was provided for each work unit in U.S. Dollars and was used to calculate the operating ratio for each unit. The operating ratio shows the efficiency of a company's management by comparing operating expenses to net sales. A smaller ratio indicates the unit's ability to generate profit if revenue were to decrease.

Earnings – EBITDA. Also known as operating cash flow, EBITDA represents the organization's earnings before the deduction of interest expenses, taxes, depreciation, and amortization. EBITDA is often used in cases in which companies have either large amounts of fixed assets which are subject to heavy depreciation charges or have a large amount of acquired intangible assets on its books which are subject to large amortization charges. EBITDA was provided for each work unit in U.S. Dollars. To control for differences in the size of the work units, this study used EBITDA per employee (e.g., EBITDA/average of begin and end count).

Analyses

Project Aims 1 and 2. Confirmatory Factor Analyses (CFA) were performed using Lisrel 8.72 (Jöreskog & Sörbom, 2005) to explore both the factor structure of the engagement index in itself, as well as the discriminant validity between engagement, job satisfaction, and organizational commitment in terms of factor structure. First, a CFA was performed using the maximum likelihood method of estimation in order to contrast a one dimensional model of engagement with a three dimensional model of engagement. A second CFA was then run to contrast a one-factor, undifferentiated model of all three job attitude measures to a three-factor model differentiating between the three constructs (engagement, job satisfaction, and organizational commitment).

All CFAs were conducted on correlation matrices. A variety of fit indices were included in addition to the chi-square statistic, which is highly sensitive to sample size, in order to evaluate the CFA results. Additional fit indices included the comparative fit index (CFI, Bentler, 1990), the non-normed fit index (NNFI, Tucker & Lewis, 1973; Bentler & Bonett, 1980), and the root mean square error of approximation (RMSEA, Steiger & Lind, 1980). To assess fit, CFI and NNFI values of greater than .90 are typically used to indicate good model fit (Hoyle, 1995; Hu & Bentler, 1999). Additionally, RMSEA values of .05 or below indicate good fit (Browne & Cudeck, 1993). Finally to compare models, in addition to a non-significant chi-square change, a change in CFI and NNFI values of less than .01 was used as the cut-off, indicating no significant changes in the fit of the models being compared (Widaman, 1985).

Project Aims 3 and 4. In order to explore the relationship between the unit-level job attitude variables and performance outcomes, it is first necessary to aggregate the

individual-level scores up to the unit level. This process must be accompanied by statistical justification, which was assessed using within-group interrater agreement (r_{wg} ; James, Demaree, & Wolf, 1984). According to LeBreton and Senter (2008), the r_{wg} statistic was designed to measure interrater agreement by comparing the observed variance in ratings furnished by multiple judges of a single target to the variance one would expect when the judges responded randomly. The r_{wg} statistic ranges in value from 0 (perfect lack of agreement) to 1 (perfect agreement). A r_{wg} value of .70 or higher represents an acceptable level of agreement to support data aggregation (LeBreton & Senter, 2008). To determine whether there was statistical justification to aggregate the individual-level job attitude measure scores, the range in r_{wg} values across the work units, as well as the mean r_{wg} value across all work units was computed.

Correlations were then used to determine the relationship between overall engagement, as well as the three engagement facets, and the three outcome measures: turnover, operating costs, and earnings. Engagement and its facets were conceptualized using three different methods: the average score of the unit, the lowest score of the unit, and the highest score of the unit.

Project Aim 5. Correlations and regressions were used to explore the discriminant validity of engagement, job satisfaction, and organizational commitment in terms of their predictive uniqueness. Correlational analyses were used to determine the pattern of the relationships for each of the three job attitude measures with the three unit outcome measures. Similar to engagement, job satisfaction and organizational commitment were also conceptualized at the unit-level using three

different methods: the average score of the unit, the lowest score of the unit, and the highest score of the unit. Significance tests using the procedures outlined by Meng and colleagues (Meng, Rosenthal & Rubin, 1992) were conducted to compare the dependent correlations. Next, regression analyses were used to explore the extent to which engagement predicted the business metric outcomes after controlling for job satisfaction and organizational commitment. For each of the regression analyses, the job attitude variables were entered as the independent variables and the business metric outcome was entered as the dependent variable. In addition to looking at the overall R and R^2 , the standardized beta weights and partial correlations were examined to determine the extent to which engagement predicts the business metrics outcomes, after controlling for job satisfaction and commitment.

Project Aim 6. Two approaches were used to test for mediation. First, Baron and Kenny's (1986) four-step approach was used to test whether engagement mediated the relationship between past and future turnover/performance. According to Baron and Kenny, a variable is a mediator if 1) there is a significant relationship between the independent variable and the dependent variable; 2) there is a significant relationship between the independent variable and the mediator; 3) the mediator still predicts the dependent variable after controlling for the independent variable; and 4) the relationship between the independent variable and the dependent variable is reduced when the mediator is included in the equation (Tabachnick & Fidell, 2007). Regression analyses were used to test for these four relationships, with the 2008 performance outcomes (turnover, operational costs, and EBITDA) as the independent variable, unit-level engagement as the mediator, and the 2009 performance outcomes

as the dependent variable. In addition to Baron and Kenny's approach, Sobel's (1982) test was also calculated to determine the significance of the mediation effect.

CHAPTER 3

RESULTS

Prior to conducting any analyses, the individual-level data were cleaned and screened. First, the data was examined for insufficient effort or repeat responding. To do this, the variance across the 73 engagement survey items was examined for each participant. Participants with zero variance across these items were eliminated from the analysis; this procedure is consistent with the long string approach and lenient cutoff recommended by Huang and colleagues (Huang, Curran, Keeney, Poposki, & DeShon, 2012). Using this approach, a total of 221 individuals or 2.1% of the sample was eliminated. Next, the data was examined for missing data. To be retained, individuals needed to complete at least 80% of each of the job attitude measures used in the current study. This resulted in 173 or 1.7% of the sample being removed from the analyses.

The individual-level data was next screened for multivariate outliers using Mahalanobis Distance. Any case with a Mahalanobis Distance greater than $\chi^2(6) = 24.10$ ($p < .0005$) was flagged as a multivariate outlier. This yielded a total of 169 multivariate outliers. Rather than deleting these cases, all analyses were conducted with and without the multivariate outliers included in the sample¹.

As a final step, chi-squared tests and one-way ANOVAs were used to explore the extent to which there were significant differences between those included in the study, those excluded for missing data/repeat responding, and those cases identified as multivariate outliers. While chi-squared tests indicated that there were no

¹ Because there were no significant differences between the results when the 169 individual-level multivariate outliers were included in the analysis and when they were excluded, the results reported include these cases in the analyses.

significant differences between the three groups in regards to gender, employment status, and functional area, there were slight differences in the proportion of individuals within the three groups on the remaining demographic variables. This was likely due to the large sample size, as the effect sizes of these differences were very small (Cramer's V ranged from .02 to .06). Table 4 presents the results of the chi-square tests for the demographic variables and Table 5 illustrates the breakdown of the demographic variable categories into the three groups.

One-way ANOVAs were used to test for significant differences in scores on the three job attitude variables used in the current study. These analyses revealed significant differences in the means for engagement, the three engagement facets, job satisfaction, and organizational commitment between the three groups. Table 6 presents the results of the one-way ANOVA tests and provides the mean scores on the job attitude variables by group. To assess pairwise differences in mean job attitude scores between the three groups, the Scheffe post-hoc test ($p = .05$) was performed. The results indicated that the mean job attitude scores for participants included in the analyses significantly differed from those excluded from the analyses due to missing data or repeat responding and those identified as multivariate outliers. Means for those excluded for missing data or repeat responding were slightly higher (Cohen's d ranged from -0.10 to -0.59) than those individuals included in the analyses. Mean scores on the job attitude variables for individuals identified as multivariate outliers were significantly lower (Cohen's d ranged from 0.93 to 1.94) than individuals included in the analyses.

Table 7 provides information on the means, standard deviations, and correlations of the three job attitude measures used in the current study for the groups included in the analyses.

Project Aim 1. To investigate the factor structure of the engagement index, confirmatory factor analyses were run to compare the fit of a one-factor model of engagement with the fit of a three-factor model of engagement. Table 8 provides the fit indices for both the one- and three-factor models of engagement. For the one-factor model, the chi-square statistic was significant ($\chi^2 = 12,765.80$; $p = 0.0$), though this is likely due to the large sample size (*Critical N* = 84.21). The other fit indices indicated less than adequate fit (RMSEA = 0.14; CFI = .89; NNFI = .86). For the three-factor model, the chi-square statistics was also significant ($\chi^2 = 3818.47$; $p = 0.0$), again due to the large sample size (*Critical N* = 250.75). However, the fit indices indicate good fit for the three-factor model (RMSEA = 0.08; CFI = .96; NNFI = .96).

To compare the fit of the models, the change in the chi-square statistic, as well as the CFI and NNFI was calculated. The change in the chi-square statistic was significant and the change in the CFI and NNFI fit indices were both greater than .01, indicating that the three-factor model of engagement fit the data better than the one-factor model. Table 9 provides the latent inter-correlations between the three engagement facets. While the relationships between absorption-dedication and absorption-vigor were both moderate (.45 and .49, respectively), the correlation between the dedication-vigor scales was high (.75), indicating that there was overlap between these two engagement facets.

Due to the high correlation between the dedication-vigor scales, follow up analyses were run to compare the fit of a two-factor model of engagement with these two scales combined. Table 10 compares the fit indices for the two-factor model of engagement to the one- and three-factor models. For the two-factor model, the chi-square statistic was again significant ($\chi^2 = 5,718.34$; $p = 0.0$), due to the large sample size (*Critical N* = 189.02). The other fit indices indicated adequate fit (RMSEA = 0.09; CFI = .95; NNFI = .94). The change in the chi-square statistic between the one- and two-factor models was significant and the change in the CFI and NNFI fit indices were both greater than .01, indicating that the two-factor model of engagement fit the data better than the one-factor model. Next, the fit of the two- and three-factor models was compared. Again, the change in the chi-square statistic between these models was significant. While the change in the CFI was 0.01, the change in NNFI was 0.02. These findings suggest that the three-factor model of engagement fits the data slightly better than the two-factor model.

Project Aim 2. A second set of confirmatory factor analyses were run to explore the discriminant validity between engagement, job satisfaction, and organizational commitment in terms of factor structure. Table 11 provides the fit indices for both the one- and three-factor models of the job attitude measures. For the one-factor model testing an undifferentiated job attitude factor, the chi-square statistic was significant ($\chi^2 = 90,835.39$; $p = 0.0$), though this is likely due to the large sample size (*Critical N* = 100.48). While the RMSEA value was high (RMSEA = 0.13), the other fit indices indicated adequate fit (CFI = .91; NNFI = .91). For the three factor model assessing three unique job attitude constructs, the chi-square statistic was again significant due

to the large sample size ($\chi^2 = 62,491.74$; $p = 0.0$; *Critical N* = 117.64). Again the RMSEA value was high, though slightly lower than the one-factor model (RMSEA = 0.11). The CFI and NNFI also indicated slightly better fit in the three-factor model (CFI = .93; NNFI = .92).

To compare the fit of the two models, the change in chi-square statistic, as well as the CFI and NNFI was again calculated. The change in the chi-square statistic was significant. The change in the CFI was .02, while the change in the NNFI was .01. Taken together, these results support hypothesis one, indicating that the three-factor model fit the data slightly better than the one-factor model which did not distinguish between the three job attitude measures. Table 12 provides the latent inter-correlations between the three job attitude measures. Although the three-factor model distinguishing among the job attitude measures fit the data better, engagement, job satisfaction, and organizational commitment are all strongly correlated. The latent correlation between job satisfaction and job commitment was the highest (.93), though the correlations between engagement – job satisfaction and engagement – organizational commitment were still high (.73 and .78, respectively).

Project Aims 3 and 4. Prior to conducting any of the analyses at the unit-level, the r_{wg} statistic was calculated for each of the job attitude measures to justify aggregation. For work units to be included in these analyses, there needed to be at least five individuals from the unit who completed the survey; this resulted in a total of 600 work units. Table 13 provides the descriptive statistics for r_{wg} for each of the individual-level job attitude measures. The mean r_{wg} value across all the measures ranged from .72 (absorption) to .96 (engagement). The percentage of work units

falling within the acceptable range to support aggregation (.70 to 1.00) ranged from 73.8% (absorption) to 99.5% for engagement. These results indicate sufficient empirical support for aggregating the individual-level job attitude scores to the work unit level.

The unit-level business metric data was then screened for outliers. First, standardized scores were examined for each of the business metric variables to identify univariate outliers. Absolute values greater than 3.29 were flagged and the number of cases identified for each variable ranged from 0 to 16. Due to the wide variability in unit performance on these metrics, the cases identified as univariate outliers for each variable were excluded from the analyses. In addition, the data were investigated to detect for multivariate outliers using Mahalanobis Distance. Any case with a Mahalanobis Distance greater than $\chi^2(14) = 36.123$ ($p < .001$) was flagged as a multivariate outlier. This yielded a total of 20 multivariate outliers. These cases were also excluded from the unit-level analyses.

Tables 14 and 15 provide information on the unit-level job attitude variables. Table 14 provides descriptive statistics for the unit-level job attitude variables for each of the three composition models (average, lowest, and highest unit scores) for units where at least five individuals completed the engagement survey and the survey participation rate was at least 50%. While there was very little variance between units on the average score (SD ranged from 0.14 to 0.32) and high score (SD ranged from 0.03 to 0.21) composition models, there was more variance between units on the lowest score (SD ranged from 0.58 to 0.80). Table 15 presents the correlations between the unit-level job attitude variables for each of the three compositions

models. Table 16 presents descriptive statistics for the business metric outcomes - voluntary turnover, operating costs (operating ratio), and earnings (EBITDA per individual).

To investigate hypotheses two through four, correlations were used to explore the relationship between engagement and the three outcome measures: turnover, operating costs, and earnings. Table 17 presents the correlations between engagement and the 2009 business metric outcomes for each of the various engagement conceptualizations. Looking first at the relationship between engagement and voluntary turnover, hypothesis two was partially supported. There was a significant, negative relationship between the lowest unit engagement score and turnover (refer to Figure 2). The relationships between turnover and both the average and highest unit engagement scores were not significant. Hypothesis three was not supported, as the relationship between engagement and operating costs was not significant for any of the engagement composition models. Finally, looking at the relationship between engagement and earnings, there was some support for hypothesis four (refer to Figure 3). The highest unit engagement score was positively related to earnings. However, the average unit engagement score was not related to earnings and the lowest unit engagement score significantly related to earnings in the opposite direction. For both voluntary turnover and earnings, the lowest unit engagement score had the strongest relationship with the business unit metrics.

Next, correlations were used to explore the relationship between the engagement facets (dedication, absorption, and vigor) and the 2009 business metrics. Table 18 presents the results of these analyses. Looking first at the dedication facet

of engagement, both the average and lowest unit dedication scores were negatively related to voluntary turnover. The relationship between the highest dedication score and turnover was not significant. The relationship between dedication and operating costs was also not significant for any of the composition models. Finally, both the average and lowest unit scores were negatively related to earnings. The relationship between the highest unit dedication score and earnings was not significant. Hypothesis five was partially supported in that voluntary turnover and both the average and lowest unit dedication scores were significantly and negatively correlated. Although the correlations between earnings and the average and lowest unit dedication scores were significant, they were in the opposite direction from what was expected. While both the average and lowest unit scores were equally strong in predicting voluntary turnover, the lowest unit score was the strongest predictor for earnings.

Looking next at the engagement facet of absorption, the relationship between the average unit score and voluntary turnover was significant, though it was in the opposite direction from what was hypothesized. The relationship between the highest unit absorption score and voluntary turnover was not significant. While the lowest unit absorption score was in the expected direction, it was not significant. Similar to dedication, the relationship between operating costs and absorption was not significant. Lastly, the average unit absorption score was positively related to earnings. Both the lowest and highest unit absorption scores were not significantly related to earnings, though the relationship with the highest unit score was in the expected direction. Hypothesis six was partially supported, as the average unit

absorption score and earnings was significantly and positively correlated. While the relationship between the average unit absorption score and voluntary turnover was significant, it was in the opposite direction from what was hypothesized. For absorption, the average unit score had the strongest relationships with the business metric outcomes.

Lastly, looking at the engagement facet of vigor, none of the vigor composition models were significantly related to voluntary turnover. Similar to the findings of the other two engagement facets, the relationship between vigor and operating costs was not significant for any of the composition models either. Finally, both the average and lowest unit vigor scores were negatively related to earnings. The relationship between the highest unit score and earnings was not significant. Hypothesis seven was not supported, as the only significant relationships between vigor and the business metrics outcomes were significant in the opposite direction. The lowest unit score had the strongest correlation with earnings, while the highest unit score had the strongest correlation with turnover, though it was not significant. Figures 4 through 6 depict the significant relationships between the engagement facets and the business metric outcomes.

Project Aim 5. To address the third research question, correlations were used to explore the pattern of relationships between the job attitude variables and the business metric outcomes. Table 19 presents the correlations between the job attitude measures and the three 2009 business metrics outcomes. Similar to engagement, job satisfaction, and organizational commitment were also

conceptualized at the unit level using three different methods: the average, lowest, and highest scores of the unit.

All three job attitude variables had significant, negative relationships with voluntary turnover. In all three cases, the lowest unit score yielded the strongest correlations with turnover. The correlations between the lowest unit scores and turnover were as follows: $-.11$ for engagement, $-.14$ for job satisfaction, and $-.16$ for organizational commitment (refer to Figure 7); however, the differences were not statistically significant. In addition, the average unit organizational commitment score was also significantly, negatively related to turnover ($r = -0.12$). Organizational commitment had the strongest relationship with turnover, followed by job satisfaction, and then engagement.

There were no significant relationships between any of the job attitude measures and the operating costs variable.

All three job attitude variables had significant relationships with earnings. In all cases, the lowest unit score was negatively related to earnings and the highest unit score was positively related to earnings (refer to Figures 8 and 9). Additionally, the lowest unit scores on each of the variables yielded the strongest relationships with earnings. Looking first at the lowest unit scores, the correlations were as follows: $-.28$ for engagement, $-.23$ for job satisfaction, and $-.24$ for organizational commitment. The correlations between the highest unit score and earnings were $.14$ for engagement, $.16$ for job satisfaction, and $.18$ for organizational commitment. None of these differences were statistically significant. Engagement had the strongest correlation in terms of the lowest unit score, while organizational commitment had the strongest

relationship in terms of the highest unit score. Overall, the pattern of correlations with the business metric outcomes was similar for the three job attitude measures.

Regression analyses were then used to explore the extent to which each of the job attitude variables uniquely predicted the business metric outcomes. Table 20 presents the results of the regression analyses for 2009 voluntary turnover. The lowest unit scores for engagement, job satisfaction, and commitment were entered as predictors. The overall model was significant ($F(3, 416) = 3.59, p < .05$), and the three job attitude variables accounted for 2.5% of the variance in 2009 voluntary turnover. Although each of the variables was significantly and negatively related to voluntary turnover on its own, when entered into the regression together, none of the variables had a significant beta. While the zero-order correlations for these variables ranged from $-.11$ to $-.16$, partial correlations were much smaller, ranging from $.00$ to $-.08$.

Tables 21 and 22 present the results of the regression analyses for 2009 earnings. Looking first at the results presented in Table 21, the highest unit scores for engagement, job satisfaction, and commitment were entered as predictors. Once again, the overall model was significant ($F(3, 291) = 3.55, p < .05$), and the three job attitude variables accounted for 3.5% of the variance in 2009 earnings. Once again, the betas for the three job attitude variables were not significant. While zero-order correlations ranged from $.14$ to $.18$, partial correlations were again smaller, ranging from $.03$ to $.07$.

Finally, looking at the results presented in Table 22, the lowest unit scores for engagement, job satisfaction, and commitment were entered as predictors. Again, the overall model was significant ($F(3, 291) = 9.09, p < .001$), and the three job attitude

variables accounted for 8.6% of the variance in 2009 earnings. While the beta weights for job satisfaction and commitment were not significant, the beta weight for engagement was significant ($\beta = -.21, p < .01$). Zero-order correlations ranged from -.23 to -.28, while partial correlations ranged from -.02 to -.16. The results of the third regression analysis provide some evidence to suggest that engagement offers unique prediction of 2009 earnings.

Project Aim 6. The final aim of the project was to test whether engagement mediated the relationship between past and future turnover and performance metrics. Because the relationship between engagement and operating costs was not significant in the prior analyses, mediation analysis was only conducted for the voluntary turnover and earnings variables. Regression was used to test whether engagement mediated the relationship between past (2008) and future (2009) turnover and earnings.

Table 23 presents the mediation results for voluntary turnover. In step one, a simple regression analysis was conducted with the 2008 turnover variable as the predictor and the 2009 turnover variable as the dependent variable. The results indicated that the 2008 voluntary turnover metric significantly predicted turnover in 2009 ($F(1, 379) = 6.50, p < .05$). The beta weight for 2008 voluntary turnover was significant ($\beta = .13, p < .05$). In step two, another simple regression analysis was conducted to determine the relationship between engagement (mediator) and 2008 voluntary turnover (independent variable). In this step, the lowest unit engagement score was entered as the predictor and the 2008 voluntary turnover variable was entered as the dependent variable. The results indicated that engagement did not

significantly predict turnover in 2008 ($F(1, 380) = 0.13, p = 0.72$). The beta weight for engagement was not significant ($\beta = .02, p = 0.72$). Results of the Sobel test confirmed the lack of a mediation effect ($z = -0.33, p = 0.74$); engagement did not mediate the relationship between past and future turnover.

To determine whether engagement mediates the relationship between past and future earnings, both the lowest and highest unit engagement scores were tested. Table 24 presents the mediation results for earnings using the lowest unit engagement score. In step one, a simple regression analysis was conducted with the 2008 earnings variable as the predictor and the 2009 earnings variable as the dependent variable. The results indicated that the 2008 earnings metric significantly predicted earnings in 2009 ($F(1, 260) = 713.16, p < .001$). The beta weight for 2008 earnings was significant ($\beta = .86, p < .001$). In step two, another simple regression analysis was conducted to determine the relationship between engagement (mediator) and 2008 earnings (independent variable). In this step, the lowest unit engagement score was entered as the predictor and the 2008 earnings variable was entered as the dependent variable. The results indicated that the lowest unit engagement score significantly predicted earnings in 2008 ($F(1, 262) = 22.77, p < .001$). The beta weight for this step was significant ($\beta = -.28, p < .001$). Finally, in step 3, a hierarchical regression analysis was performed to determine the relationship between the engagement and 2009 earnings, after controlling for earnings in the previous year. In block one, 2008 earnings was entered as a single predictor of the 2009 earnings variable, and in block two, engagement was added as a predictor to the model. While the regression analyses revealed that the overall model was significant ($F(2, 259) =$

358.81, $p < .001$), engagement was no longer a significant predictor of 2009 earnings, after controlling for earnings in 2008 ($\beta = -0.05$; $p = 0.17$). Results of the Sobel test confirmed the lack of a mediation effect ($z = 1.39$, $p = 0.17$); the lowest unit engagement score did not mediate the relationship between past and future earnings.

Table 25 presents the mediation results for earnings using the highest unit engagement score. In step one, a simple regression analysis was conducted with the 2008 earnings variable as the predictor and the 2009 earnings variable as the dependent variable. The results indicated that the 2008 earnings metric significantly predicted earnings in 2009 ($F(1, 260) = 713.16$, $p < .001$). The beta weight for 2008 earnings was significant ($\beta = .86$, $p < .001$). In step two, another simple regression analysis was conducted to determine the relationship between engagement (mediator) and 2008 earnings (independent variable). In this step, the highest unit engagement score was entered as the predictor and the 2008 earnings variable was entered as the dependent variable. The results indicated that the highest unit engagement score significantly predicted earnings in 2008 ($F(1, 262) = 12.79$, $p < .001$). The beta weight for this step was significant ($\beta = .22$, $p < .001$). Finally, in step 3, a hierarchical regression analysis was performed to determine the relationship between the engagement and 2009 earnings, after controlling for earnings in the previous year. In block one, 2008 earnings was entered as a single predictor of the 2009 earnings variable, and in block two, engagement was added as a predictor to the model. While the regression analyses revealed that the overall model was significant ($F(2, 259) = 355.53$, $p < .001$), engagement was no longer a significant predictor of 2009 earnings, after controlling for earnings in 2008 ($\beta = -0.01$; $p = 0.68$). Results of the Sobel test

confirmed the lack of a mediation effect ($z = -0.41$, $p = 0.68$); the highest unit engagement score did not mediate the relationship between past and future earnings.

Additional Follow-up Analyses. Two sets of follow-up analyses were conducted to further explore the findings between engagement and the business metric outcomes. First, mean differences between supervisors and employees on the job attitude variables were explored at the individual level, to determine if combining these groups made sense. Table 26 presents the results of these analyses. While significant differences were found between the two groups on each of the job attitude variables, the effect size of these differences was small (Cohen's d ranged in magnitude from .07 to .20). In most cases, supervisors scored slightly higher on the job attitude variables than employees, though the opposite was true for the absorption facet of engagement. Next, the correlations between engagement and the business metric outcomes were compared between the two groups. Table 27 presents the results of these analyses. In most cases, the correlations between groups were similar; however, there were a couple differences. First, the relationship between the lowest unit engagement score and voluntary turnover was significant for employees, but not supervisors. Second, the correlation between the average unit engagement score and earnings was statistically significant for employees only. Finally, the magnitude of the correlation between the lowest unit engagement score and earnings was stronger for employees than supervisors.

The second set of follow-up analyses explored the extent to which the unit standard deviation on engagement moderated the significant relationships found between engagement and the business metric outcomes. Tables 28 through 30

present the results of these analyses. While there was no moderation effect found between the lowest unit engagement score and either voluntary turnover or earnings, the unit standard deviation on engagement did moderate the relationship between the highest unit engagement score and earnings. Figure 10 illustrates this relationship.

CHAPTER 4

DISCUSSION

The purpose of the present study was to explore the relationship between engagement and its consequences at higher levels of analysis. As such, the current study answered the call for additional research exploring the relationship between work unit engagement and business metric outcomes. The primary research aims of this project were six-fold: first, to explore the factor structure of the engagement index; second, to explore the discriminant validity between engagement and two common job attitudes (job satisfaction and organizational commitment) in terms of factor structure; third, to explore the usefulness of various composition models for aggregating individual-level engagement up to the unit level; fourth, to illustrate the relationship between unit-level engagement and work unit turnover and performance metrics (operating costs and earnings); fifth, to explore the discriminant validity between engagement, job satisfaction, and organizational commitment in terms of predictive uniqueness; and finally, to explore whether work unit engagement mediates the relationship between past and future performance.

Looking first at the factor structure of the engagement index, confirmatory factor analysis results indicated that the three-factor model fit the data better than a one-factor model which does not distinguish between the three engagement facets. This finding is consistent with the research of Schaufeli and colleagues (Nerstad et al., 2010; Schaufeli & Bakker, 2003; Schaufeli & Bakker, 2004; Schaufeli, Martinez, Marques Pinto, Salanova, & Bakker, 2002; Seppälä et al., 2009) in regards to the factor structure of the UWES. While the inter-correlations between the engagement

facets were smaller in the current study than what has been reported with the UWES (Schaufeli & Bakker, 2004), the three facets do appear to be highly related. The latent correlations between the absorption-vigor and dedication-absorption were moderate (.49 and .45, respectively); however, the latent correlation between dedication-vigor was much higher, at .75. Because of this strong correlation, a two-factor model was run as a follow up to explore the fit of a two-factor model with the dedication and vigor scales combined. Though the two-factor model of engagement fit the data significantly better than the one-factor model, the three-factor model still fit the data slightly better than the two-factor model. Given the strong correlations between the engagement facets and the growing consensus that engagement can be defined by high levels of energy and involvement (Albrecht, 2010), future work may benefit from exploring alternative configurations of the engagement facets.

The second aim of this study was to explore the discriminant validity of engagement with job satisfaction and organizational commitment in terms of factor structure. Results of the confirmatory factor analysis indicated that the three-factor model which differentiates between the three job attitude measures fit the data slightly better than a one-factor model. The latent inter-correlations revealed that job satisfaction and organizational commitment had the strongest relationship, with a correlation of .93. While the correlations between engagement and the two job attitude variables were smaller, the constructs were still highly correlated (correlations were .73 with job satisfaction and .78 with organizational commitment). Looking at the relationship between the engagement facets and the two job attitude variables suggests that the dedication facet is driving the strong relationships between

engagement and job satisfaction and organizational commitment. The correlation between dedication and job satisfaction in the current study was .63, while the correlation with organizational commitment was .70. The relationships between the other two facets of engagement and the job attitude variables were more moderate, ranging from .37 to .43. Although the results of the confirmatory factor analysis do provide some evidence to support the uniqueness of the engagement construct, the three job attitude variables used in the current study were highly correlated. Future work is needed to explore the extent to which engagement is unique in terms of its factor structure using more widely used measures of job satisfaction and organizational commitment.

The third aim of the current study was to explore alternative composition models for aggregating individual-level engagement up to the unit-level. Very little engagement research has been conducted at the unit or organizational levels of analysis, and within that small body of research, most researchers conceptualize engagement at the higher level of analysis as the average of the individual engagement scores. Alternative models for conceptualizing unit-level engagement have yet to receive attention within the research literature (Van Rooy et al., 2011). In addition to the mean, the current study explored using the lowest and highest unit scores to represent unit-level engagement. In most cases, these alternative conceptualizations had stronger relationships with the outcome variables of interest than the average unit engagement score. While the average unit score had the strongest relationships with the business metric outcomes for the absorption facet of engagement and the highest unit score had the strongest relationship between vigor

and one of the business metric outcomes, the lowest unit score most often produced the strongest correlations with the business unit outcomes. These findings suggest that researchers should not automatically resort to using the average unit score to aggregate individual-level engagement, but may instead benefit from exploring alternative conceptualizations of engagement, such as the lowest or highest scores within the unit.

The next study aim was to explore the relationship between engagement, along with each of its facets, and three business metric outcomes: voluntary turnover, operating costs (operating ratio), and earnings (EBITDA). Looking first at engagement, the lowest unit score was negatively related to voluntary turnover ($r = -0.11$). This finding is consistent with previous studies exploring the relationship of engagement with both turnover intentions and actual turnover (e.g., Hallberg & Schaufeli, 2006; Harter et al., 2002; Harter et al., 2009; Saks, 2006; and Schaufeli & Bakker, 2004), although the size of the correlation was smaller than what has been found in the literature.

In regards to the engagement facets, as expected, dedication was also negatively related to turnover, and had the strongest relationship of the three engagement facets. This finding is consistent with the meta-analytic work of Halbesleben (2010) who found a negative relationship between dedication and turnover intentions. While the correlation between vigor and turnover was negative, the relationship was not significant. Contrary to what was hypothesized, the average unit absorption score was significantly and positively related to turnover. Work by Schaufeli and colleagues (2006, 2008) exploring the relationship between

engagement and workaholism found that the absorption facet of engagement was positively correlated with the working excessively component of workaholism. It is possible that this could account for the positive relationship between absorption and turnover found in the current study. In fact, a recent area of interest within the engagement literature is whether too much engagement is a bad thing (Albrecht, 2010). Many have speculated that a constant state of high-energy engagement could lead to negative individual and organizational outcomes such as exhaustion, a loss of creativity, and lower productivity. Future work is needed to further explore the relationship between the absorption facet of engagement and its impact upon both personal (e.g., exhaustion) and organizational (e.g., turnover) outcomes.

This was the first study to explore the relationship between unit-level engagement and operating costs. Based upon previous findings, it was expected that engagement would lead to lower unit operating costs because of the construct's relationship with personal initiative, innovativeness, and productivity. However, the relationship between engagement and operating costs was not significant. Additionally, no significant relationships were found between operating costs and any of the engagement facets. It could be that this variable is too distal and that there is little opportunity for most individuals within the unit to impact the unit's operating costs. Harter and colleagues (2009) suggest that while some outcomes are the direct consequence of engagement, others such as sales and profit, are more of a downstream result of intermediary outcomes. It is likely that operating costs fall into this latter category. Future work should explore whether this finding was unique to the current organization, as well as if there is a significant relationship between operating

costs and engagement for managers, who may have more influence upon a unit's costs.

The final business metric outcome included in the current study was earnings (EBITDA per individual). While previous research has explored the relationship between financial returns, profitability (percentage profit of sales), and productivity (revenue/sales per person; see Xanthopoulou and colleagues, 2009b; Harter and colleagues, 2002 and 2009 as examples), this is the first study to look at EBITDA as a measure of earnings. Consistent with what has been found in previous research, it was expected that the relationship between earnings and engagement would be positive. The results of the current study offered partial support for this relationship. The highest unit engagement score was positively related to earnings. In addition, the average unit score on the absorption facet of engagement was also positively related to earnings. However, there were significant results in the opposite direction as well. The lowest unit engagement score was significantly and negatively related to earnings. Furthermore, both the average and lowest unit scores for dedication and vigor were also negatively related to earnings.

Follow up analyses were conducted to try to explain this finding. Looking at the relationship between the highest, lowest, and average unit scores on these variables revealed that highest and lowest scores were either very weakly correlated in the case of dedication ($r = .08$; $p < .05$) or not significantly correlated as was the case for engagement and vigor. Analyses were also run to determine whether there was a non-linear relationship between these variables and earnings, but that did not prove to be the case. Additional follow up analyses were conducted to look at a few potential

moderators of these relationships (supervisory vs. employee role, unit standard deviation of engagement). The relationship between the lowest unit engagement score and earnings was stronger for employees than for supervisors. Although unit-level standard deviation on engagement was found to moderate the relationship between the highest unit engagement score and earnings, this was not the case with the lowest unit engagement score. Based upon these results, it is not readily apparent why the relationship with earnings for these variables is in the opposite direction of what was found between the highest unit engagement and average unit absorption scores and earnings. Future research should be conducted to determine whether this finding generalizes to other organizations and to explore other potential moderators of this relationship.

The fifth aim of the current study was to explore the discriminant validity between engagement, job satisfaction, and organizational commitment in terms of predictive uniqueness. To do this, the correlations between the three job attitude variables and business metrics outcomes were used to explore the pattern of relationships between these variables. Across the business outcome measures, all three job attitude variables exhibited a similar pattern of relationships. While there were slight differences in the magnitude of the correlations between the three job attitude variables and the business metric outcomes, none of the differences were statistically significant. The lowest unit scores for engagement, job satisfaction, and organizational commitment were all significantly and negatively related to voluntary turnover. Of the three variables, organizational commitment had the strongest relationship with turnover, followed by job satisfaction, and then engagement. None of

the job attitude measures were significantly related to operating costs. Finally, both the highest and lowest unit scores for all three job attitude variables were significantly related to earnings. The highest unit scores for all three job attitude measures were positively related to earnings. Again, organizational commitment had the strongest relationship between the highest unit score and earnings, followed by job satisfaction and then engagement. The lowest unit score for each of the job attitude measures was significantly and negatively related to earnings. The lowest unit engagement score had the strongest relationship, followed by organizational commitment and job satisfaction.

These findings are consistent with the confirmatory factor analytic results which indicated strong correlations between the three job attitude measures. Given that engagement, job satisfaction, and organizational commitment are so highly correlated, it is not surprising that they exhibit similar patterns of relationships with the three business metric variables. Regression analyses were also used to explore the extent to which any of the job attitude variables emerged as unique predictors of the business metric outcomes. There was only a single case in which one of the job attitude variables remained a significant predictor after controlling for the effects of the remaining two job attitude variables. The lowest unit engagement score was a significant predictor of earnings after controlling for both organizational commitment and job satisfaction.

The current findings provide little evidence to support the predictive uniqueness of the engagement construct. While there has been evidence within the research literature affirming the distinctiveness of engagement (e.g., Christian et al., 2011; Rich

et al., 2010), others studies have reaffirmed the importance of traditional job attitude measures (e.g., Dalal et al., 2009; Wefald & Downey, 2009). Additional work is needed to explore the relationships between engagement and the more traditional job attitude measures, as well as to identify the areas in which each serve as distinctive predictors. Hallberg and Schaufeli (2006) identified one area in which engagement does appear to be a distinctive predictor – health complaints (e.g., emotional exhaustion, depressive symptoms, and sleep disturbances). More work is needed to identify other areas in which engagement may uniquely predict individual and organizational outcomes.

The last aim of the current study was to explore whether unit-level engagement mediated the relationship between past and future turnover/performance. To date, this question has not been addressed within the research literature. The current study looked at the extent to which engagement mediated the relationship between voluntary turnover and earnings in 2008 and 2009. Results indicated there was no evidence of mediation. Looking first at voluntary turnover, while the relationship between 2008 and 2009 turnover was significant, the relationship between engagement and 2008 turnover was not significant. For earnings, both the relationships between 2008 and 2009 earnings and engagement (using both the lowest and highest unit scores) and 2008 earnings were significant, but engagement was not a significant predictor of earnings in 2009, after controlling for 2008 earnings.

Limitations and Future Research

The present study was not without limitations. First, there was limited variability on the job attitude measures at both the individual and unit levels of analyses.

Standard deviations at the individual level ranged from 0.38 (vigor) to 0.79 (absorption). At the unit level, variability depended on the composition model being used; the highest unit score had the lowest variability (standard deviations ranged from 0.03 to 0.21), while the lowest unit score had the highest variability (0.58 to 0.80). Masson and colleagues (2008) have noted that this is a common issue with engagement surveys, as employee responses are likely to suffer from social desirability biases. To compound this issue, the data for the current study was gathered during a period of economic decline (National Bureau of Economic Research, 2010). Although there were some individuals who provided ratings at the lower end of the scale, the economic climate could have led others to inflate their ratings in an effort to protect their positions with the organization. The engagement survey used in the current study employed a five-point Likert scale to collect engagement ratings. Given the fact that low variability is a common issue in surveys of this nature, future research assessing employee engagement within organizations may benefit from adding additional response options to provide employees with a wider range of response options at the higher end of the scale.

A second limitation of the current study concerns the fact that the extent to which employees within the work units interacted was unclear. Richardson and West (2010) have suggested that an important aspect of team engagement is interaction frequency. They speculated that engaged work teams strive to interact as much as possible, and that it is these interactions which provide a mechanism through which team members share information and form close working relationships. Because the data for the current study came from a consulting survey engagement, there was not

an opportunity to collect information on the extent to which individuals within the work units interacted. Future research should include some measure of the interaction frequency among work units to further explore this relationship.

A third limitation of the current study has to do with the demographic characteristics of the sample. Individuals included within the current study were predominantly male, Caucasian, and had lower levels of education (less than a bachelor's degree). In addition, just over half of the sample was hourly, while approximately 40% was salaried. Because of these distinctive characteristics, it is unclear the extent to which these results may generalize to other organizations. Additionally, a majority of the participants in the current study did not hold supervisory positions. It is possible that the link between engagement and the financial returns of the unit might be stronger for supervisors, who have more control over how the unit is operating. Future research is needed to replicate these findings within other organizations and employee groups.

In addition to addressing these limitations, future research is needed to explore the impact of engagement in two key areas. There has been a great deal of work within the research literature establishing the link between engagement and individual-outcome variables; the time has come to move engagement research to a higher level of analysis (Macey and Schneider, 2008; Pugh and Dietz, 2008). Researchers should leverage multi-level models to explore the outcomes associated with team, unit, and organizational engagement. To do this, we need to gain a better conceptual understanding of engagement at higher levels of analysis (Van Rooy et al., 2011). Rather than relying solely upon the average engagement score, research needs to

explore the usefulness of alternative composition models, such as the lowest or highest scores as addressed in the current study, or other alternatives such as the median, mode, or variance within the unit. In addition, we also need to gain a better understanding of the mechanisms linking engagement and organizational outcomes. For example, a fruitful avenue for researchers may be to look at potential mediators of the relationship between engagement and financial outcomes, such as customer service climate and turnover. Furthermore, longitudinal research is needed to explore the impact of engagement on organizational outcomes over time. By capturing engagement levels over the course of several years, we can better understand how environmental factors and organizational initiatives affect group engagement, and the resulting impact on organizational outcomes.

In conclusion, the results of the current study provide limited support for the relationship between engagement and business unit outcomes, as well as the uniqueness of the engagement construct compared to job satisfaction and organizational commitment. Despite these findings, engagement remains an important organizational construct, in part because of its relationship with health outcomes. We have only scratched the surface in understanding the organizational impact of engagement; raising engagement research to a higher level will allow researchers to better capture the complex and dynamic nature of the organizations in which we work.

Table 1

Practitioner Definitions of Employee Engagement

BlessingWhite (2008)

Full engagement represents an alignment of maximum job satisfaction (“I like my work and do it well”) with maximum job contribution (“I help achieve the goals of my organization”).

Burke, Inc. (2009)

Employee engagement represents the strength of the relationship between the employee and their work.

Corporate Leadership Council (2004)

Engagement is the extent to which employees commit – both rationally and emotionally – to something or someone in their organization, how hard they work, and how long they stay as a result of that commitment.

Development Dimensions International (Wellins, Bernthal, & Phelps, 2005)

Engagement is the extent to which people value, enjoy and believe in what they do.

Gallup Organization (Harter, Schmidt & Hayes, 2002)

Employee engagement refers to the individual’s involvement and satisfaction with as well as enthusiasm for work.

Hewitt (2010)

Engaged employees demonstrate three general behaviors consistently. They:

- Say: consistently speak positively about the organization to coworkers, potential employees, and customers
- Stay: have an intense desire to be a member of the organization despite opportunities to work elsewhere
- Strive: exert extra time, effort, and initiative to contribute to business success

Mercer, LLC (2007a, 2007b)

Engagement is a state of mind in which employees feel a vested interest in the company’s success and are both willing and motivated to perform to levels that exceed the state job requirements. It is the result of how employee feel about the work experience—the organization, its leaders, the work and the work environment.

Towers Perrin (2003)

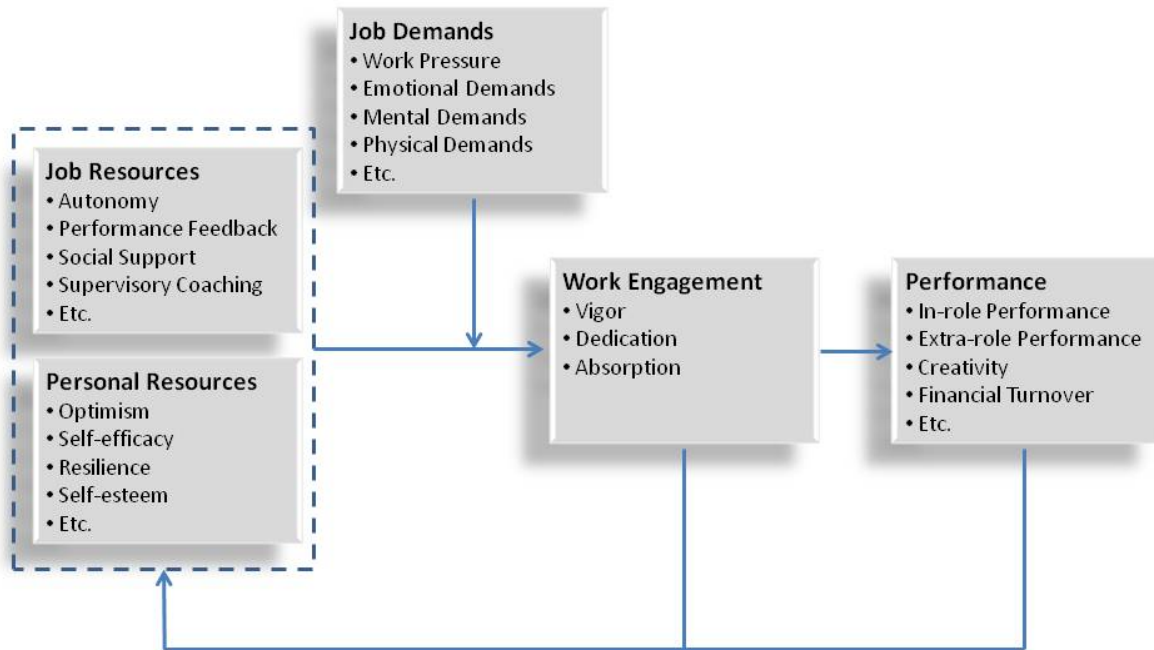
Engagement is employees’ willingness and ability to contribute to company success. It is the extent to which employees put discretionary effort into their work, in the form of extra time, brainpower, and energy.

Valtera (Schneider, Macey, Barbera, Young, & Lee, 2006)

Engaged employees feel energized, passionate, involved, dedicated, and committed.

Figure 1

The Job Demands-Resources Model of Work Engagement



Source: Bakker, A.B. (2009).

Table 2

Individual Level Sample Demographics

Sample Characteristics	% of Sample
Gender	
Male	69.5
Female	26.1
Not provided	4.4
Age	
18 – 29	18.2
30 – 39	28.6
40 – 49	28.5
50 – 59	18.4
60 or older	5.5
Not provided	0.9
Ethnicity	
American Indian/Alaskan Native	0.5
Asian	3.2
Black/African American	8.4
Caucasian/White	66.6
Hispanic/Latino	16.0
Native Hawaiian/Other Pacific Islander	0.3
Two or More Races	0.7
Not provided	4.4
Education Level	
Did not complete high school	2.7
High school diploma or GED	27.5
Some college/technical trade school – no degree	34.6
Technical/trade school degree	4.4
Associates degree	7.7
Bachelors degree	18.5
Masters degree	3.4
Doctorate degree	0.2
Not provided	0.9
Pay Type	
Hourly	54.8
Salaried	43.1
Not provided	2.1

Table 2 cont'd

Sample Characteristics	% of Sample
Role	
Supervisor (managing 1+ employees)	25.0
Non-supervisor	73.6
Not provided	1.4
Employment Status	
Full-time	98.2
Part-time	1.8
Organizational Tenure	
Less than 1 year	9.6
1 – 5 years	46.3
6 – 10 years	22.7
11 – 15 years	8.5
16 – 20 years	5.6
21 or more years	6.4
Not provided	0.8
Functional Area	
Customer Service	8.2
Sales	30.2
Finance	4.6
Operations	29.8
Sourcing/Merchandising	5.1
Purchasing	3.0
Inventory Management	1.0
HR	1.0
Marketing	1.1
IT	3.0
Other	11.8
Not provided	1.1

Table 3

Unit Level Sample Demographics

Sample Characteristics	%
	<i>(% of sample)</i>
Organizational Function	
Business Development	0.0
Business Support	3.9
Field Operations	69.7
Finance	4.8
HQ Operations	10.0
Human Resources	1.4
Information Technology	4.8
Legal	0.5
Marketing/Communications	0.5
Pricing	0.2
Sales	2.1
Sourcing	2.3
	<i>(% of unit)</i>
Organizational Tenure	
Less than 1 year	7.3
1 – 5 years	43.3
6 – 10 years	22.8
11 – 15 years	9.0
16 – 20 years	7.2
21 or more years	9.6
Pay Type	
Hourly	51.8
Salaried	46.3
Role	
Supervisor (managing 1+ employees)	26.7
Non-supervisor	72.0

Table 4

Chi-square Results Exploring Demographic Differences between Individuals Included in Analyses, Individuals Excluded for Missing Data or Repeated Responding, and Individuals Identified as Multivariate Outliers

Demographic Variable	Significant Difference	Chi-Square Result	Significance Level	Cramer's V
Gender	NO	$\chi^2 = (2, 9,867) = 2.6$	$p = .275$.02
Age	YES	$\chi^2 = (8, 10,231) = 21.1$	$p < .05$.03
Ethnicity	YES	$\chi^2 = (12, 9,867) = 59.9$	$p < .001$.06
Education Level	YES	$\chi^2 = (14, 10,225) = 29.6$	$p < .01$.04
Pay Type	YES	$\chi^2 = (2, 10,103) = 29.5$	$p < .001$.05
Role	YES	$\chi^2 = (2, 10,177) = 9.8$	$p < .01$.03
Employment Status	NO	$\chi^2 = (2, 10,322) = 3.8$	$p = .152$.02
Organizational Tenure	YES	$\chi^2 = (10, 10,236) = 26.1$	$p < .01$.04
Functional Area	NO	$\chi^2 = (20, 10,204) = 30.0$	$p = .069$.04

Table 5

Breakdown of the Demographic Differences between Individuals Included in Analyses, Individuals Excluded for Missing Data or Repeated Responding, and Individuals Identified as Multivariate Outliers

Demographic Variable	Group		
	Included in the Study (<i>n</i> = 9,759)	Excluded for Missing Data/ Repeat Responders (<i>n</i> = 394)	Identified as Multivariate Outliers (<i>n</i> = 169)
<i>Gender</i>			
Male (<i>n</i> = 7,172)	72.5%	74.1%	77.8%
Female (<i>n</i> = 2,695)	27.5%	25.9%	22.2%
<i>Age</i>			
18 – 29 years (<i>n</i> = 1,874)	18.2%	17.3%	25.3%
30 – 39 years (<i>n</i> = 2,957)	28.9%	28.2%	33.1%
40 – 49 years (<i>n</i> = 2,939)	28.5%	33.6%	28.3%
50 – 59 years (<i>n</i> = 1,895)	18.8%	17.1%	8.4%
60 years or older (<i>n</i> = 566)	5.6%	3.9%	4.8%
<i>Ethnicity</i>			
American Indian/Alaskan Native (<i>n</i> = 51)	0.5%	0.8%	0.6%
Asian (<i>n</i> = 327)	3.2%	5.8%	4.9%
Black/African American (<i>n</i> = 864)	8.5%	12.4%	16.7%
Hispanic/Latino (<i>n</i> = 1,656)	16.5%	24.9%	11.7%
Native Hawaiian/Other Pacific Islander (<i>n</i> = 26)	0.3%	0.0%	0.0%
Two or More Races (<i>n</i> = 70)	0.7%	0.8%	1.2%
White (<i>n</i> = 6,873)	70.3%	55.3%	64.8%
<i>Education Level</i>			
Did Not Complete High School (<i>n</i> = 282)	2.7%	4.9%	3.6%
High School Diploma/GED (<i>n</i> = 2,834)	27.6%	33.7%	22.2%
Some College or Technical/Trade School – No Degree (<i>n</i> = 3,575)	34.9%	36.0%	35.3%
Technical/Trade School – Degree (<i>n</i> = 456)	4.6%	2.8%	3.0%
Associates Degree (<i>n</i> = 794)	7.8%	6.7%	9.6%
Bachelors Degree (<i>n</i> = 1,914)	18.9%	12.9%	21.0%
Masters Degree (<i>n</i> = 353)	3.4%	3.1%	5.4%
Doctorate (<i>n</i> = 17)	0.2%	0.0%	0.0%
<i>Pay Type</i>			
Hourly (<i>n</i> = 5,659)	55.4%	64.0%	72.6%
Salaried (<i>n</i> = 4,444)	44.6%	36.0%	27.4%
<i>Role</i>			
Supervisor (<i>n</i> = 2,577)	25.6%	21.9%	16.4%
Non-Supervisor (<i>n</i> = 7,600)	74.4%	78.1%	83.6%
<i>Employment Status</i>			
Full Time (<i>n</i> = 10,134)	98.2%	97.0%	97.6%
Part Time (<i>n</i> = 188)	1.8%	3.0%	2.4%

Table 5 (cont'd)

Breakdown of the Demographic Differences between Individuals Included in Analyses, Individuals Excluded for Missing Data or Repeated Responding, and Individuals Identified as Multivariate Outliers

Demographic Variable	Group		
	Included in the Study (<i>n</i> = 9,759)	Excluded for Missing Data/ Repeat Responders (<i>n</i> = 394)	Identified as Multivariate Outliers (<i>n</i> = 169)
<i>Organizational Tenure</i>			
Less than 1 year (<i>n</i> = 996)	9.6%	12.1%	11.4%
1 – 5 years (<i>n</i> = 4,778)	46.6%	44.1%	56.0%
6 – 10 years (<i>n</i> = 2,344)	22.8%	26.3%	23.5%
11 – 15 years (<i>n</i> = 875)	8.7%	7.0%	6.0%
16 – 20 years (<i>n</i> = 582)	5.8%	5.9%	0.0%
21 or more years (<i>n</i> = 661)	6.6%	4.6%	3.0%
<i>Functional Area</i>			
Customer Service (<i>n</i> = 846)	8.4%	5.7%	9.6%
Sales (<i>n</i> = 3,114)	30.8%	28.3%	22.2%
Finance (<i>n</i> = 479)	4.7%	2.9%	6.0%
Operations (<i>n</i> = 3,073)	29.9%	34.0%	33.5%
Sourcing/Merchandising (<i>n</i> = 527)	5.1%	6.5%	6.6%
Purchasing (<i>n</i> = 310)	3.1%	2.6%	1.2%
Inventory Management (<i>n</i> = 108)	1.1%	0.5%	0.0%
HR (<i>n</i> = 107)	1.0%	0.8%	1.8%
Marketing (<i>n</i> = 118)	1.2%	1.0%	1.8%
IT (<i>n</i> = 307)	3.0%	2.1%	4.2%
Other (<i>n</i> = 1,215)	11.7%	15.6%	13.2%

Table 6

Mean Differences between Individuals Included in Analyses, Individuals Excluded for Missing Data or Repeated Responding, and Individuals Identified as Multivariate Outliers

Job Attitude Variable	One-way ANOVA Result	Means by Group		
		Included in the Study (<i>n</i> = 9,759)	Excluded for Missing Data/ Repeat Responders (<i>n</i> = 394)	Identified as Multivariate Outliers (<i>n</i> = 169)
Engagement	$F = 645.53, df = 2/10,316, p < .001$	4.50	4.67	3.24
Dedication	$F = 670.64, df = 2/10,316, p < .001$	4.51	4.68	2.93
Absorption	$F = 173.16, df = 2/10,312, p < .001$	4.17	4.55	3.21
Vigor	$F = 398.53, df = 2/10,314, p < .001$	4.80	4.84	3.99
Job Satisfaction	$F = 415.71, df = 2/10,315, p < .001$	4.08	4.51	2.64
Organizational Commitment	$F = 522.50, df = 2/10,266, p < .001$	4.28	4.62	2.69

Table 7

Means, Standard Deviations, and Bivariate Correlations of the Job Attitude Measures

	M	SD	1	2	3	4	5	6
1. Engagement Index	4.48	.49	.86					
2. Vigor Scale	4.79	.38	.69**	.65				
3. Dedication Scale	4.48	.60	.91**	.54**	.84			
4. Absorption Scale	4.16	.79	.71**	.39**	.40**	.76		
5. Workforce Commitment Index	4.26	.70	.68**	.43**	.70**	.37**	.90	
6. Job Satisfaction Index	4.05	.74	.63**	.37**	.63**	.37**	.83**	.87

Note. N = 9,928. Bolded values on the diagonal are Cronbach alphas. **p<.01

Table 8

Engagement Index Confirmatory Factor Analysis Results – Model Fit

Engagement Model	χ^2	<i>df</i>	<i>p</i>	RMSEA	CFI	NNFI	$\Delta\chi^2$	Δdf	Δ CFI	Δ NNFI
1 Factor Model	12765.80	65	0.0	0.14	0.89	0.86	--	--	--	--
3 Factor Model	3818.47	62	0.0	0.08	0.96	0.96	8947.33***	3	0.07	0.10

Note: χ^2 = chi square; *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; NNFI = non-normed fit index; *** $p < .001$.

Table 9

Engagement Index Confirmatory Factor Analysis Results – Latent Inter-Correlations of the Engagement Facets

Engagement Facet		1	2	3
1	Dedication	--		
2	Absorption	0.45	--	
3	Vigor	0.75	0.49	--

Table 10

Follow Up Engagement Index Confirmatory Factor Analysis Results – Model Fit

Engagement Model	χ^2	<i>df</i>	<i>p</i>	RMSEA	CFI	NNFI	$\Delta\chi^2$	Δdf	Δ CFI	Δ NNFI
1 Factor Model	12765.80	65	0.0	0.14	0.89	0.86	--	--	--	--
2 Factor Model	5718.34	64	0.0	0.09	0.95	0.94	7047.46***	1	0.06	0.08
3 Factor Model	3818.47	62	0.0	0.08	0.96	0.96	1899.87***	2	0.01	0.02

Note: χ^2 = chi square; *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; NNFI = non-normed fit index; *** $p < .001$.

Table 11

Job Attitude Confirmatory Factor Analysis Results – Model Fit

Model	χ^2	<i>df</i>	<i>p</i>	RMSEA	CFI	NNFI	$\Delta\chi^2$	Δdf	Δ CFI	Δ NNFI
1 Factor Model	90835.39	527	0.0	0.13	0.91	0.91	--	--	--	--
3 Factor Model	62491.74	524	0.0	0.11	0.93	0.92	28343.65***	3	0.02	0.01

Note: χ^2 = chi square; *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; NNFI = non-normed fit index; *** $p < .001$.

Table 12

Job Attitude Confirmatory Factor Analysis Results – Latent Inter-Correlations of the Job Attitude Measures

Job Attitude Measure		1	2	3
1	Engagement	--		
2	Job Satisfaction	0.73	--	
3	Organizational Commitment	0.78	0.93	--

Table 13

Statistical Justification for Aggregation - r_{wg} Results for Individual-level Job Attitude Measures

Measure	Minimum	Maximum	Mean	Mode	% Work Units within Acceptable Range
Engagement	0.68	1.90	0.96	0.96	99.5%
Dedication	-7.91	3.98	0.90	0.98	96.3%
Absorption	-4.13	0.99	0.72	0.84	73.8%
Vigor	-0.87	1.00	0.95	1.00	99.3%
Job Satisfaction	-3.44	2.98	0.84	.95	88.5%
Organizational Commitment	-1.03	1.99	0.89	0.98	93.8%

Note: 5 or more individuals from a unit needed to complete the survey for the work unit to be included in these analyses. Total number of work units included was 600. Acceptable ranges for r_{wg} to support aggregation range from .70 to 1.00.

Table 14

Descriptive Statistics for Unit-Level Job Attitude Variables

Measure	Minimum	Maximum	Mean	SD
<i>Average Unit-Level Score</i>				
Engagement	3.82	4.96	4.48	0.18
Dedication	3.62	4.96	4.51	0.23
Absorption	2.93	4.93	4.12	0.31
Vigor	4.27	5.00	4.79	0.14
Job Satisfaction	2.93	4.95	4.08	0.32
Organizational Commitment	2.95	4.96	4.29	0.30
<i>Lowest Unit-Level Score</i>				
Engagement	1.08	4.85	3.61	0.58
Dedication	1.00	4.86	3.41	0.80
Absorption	1.00	4.67	2.71	0.74
Vigor	1.00	5.00	4.08	0.60
Job Satisfaction	1.00	4.82	2.85	0.73
Organizational Commitment	1.00	4.90	3.11	0.77
<i>Highest Unit Level Score</i>				
Engagement	4.31	5.00	4.95	0.10
Dedication	4.57	5.00	4.98	0.06
Absorption	3.33	5.00	4.93	0.19
Vigor	4.67	5.00	5.00	0.03
Job Satisfaction	3.73	5.00	4.86	0.21
Organizational Commitment	4.10	5.00	4.93	0.14

Note: Sample includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; n = 421.

Table 15

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Engagement - Average Score	1.00																	
2 Dedication - Average Score	0.90**	1.00																
3 Absorption - Average Score	0.63**	0.26**	1.00															
4 Vigor - Average Score	0.71**	0.59**	0.32**	1.00														
5 Job Satisfaction - Average Score	0.68**	0.67**	0.35**	0.46**	1.00													
6 Commitment - Average Score	0.74**	0.75**	0.31**	0.52**	0.87**	1.00												
7 Engagement - Lowest Score	0.61**	0.66**	0.17**	0.48**	0.47**	0.54**	1.00											
8 Dedication - Lowest Score	0.56**	0.71**	0.01	0.36**	0.46**	0.53**	0.90**	1.00										
9 Absorption - Lowest Score	0.43**	0.25**	0.56**	0.19**	0.31**	0.32**	0.53**	0.35**	1.00									
10 Vigor - Lowest Score	0.41**	0.42**	0.01	0.65**	0.32**	0.37**	0.71**	0.56**	0.28**	1.00								
11 Job Satisfaction - Lowest Score	0.40**	0.50**	0.05	0.24**	0.66**	0.59**	0.61**	0.65**	0.36**	0.44**	1.00							
12 Commitment - Lowest Score	0.48**	0.58**	0.06	0.32**	0.60**	0.72**	0.69**	0.72**	0.38**	0.49**	0.78**	1.00						
13 Engagement - Highest Score	0.41**	0.24**	0.50**	0.28**	0.23**	0.25**	-0.03	-0.05	0.04	-0.04	-0.11*	-0.04	1.00					
14 Dedication - Highest Score	0.33**	0.30**	0.24**	0.15**	0.29**	0.31**	0.05	0.05	0.02	-0.03	0.05	0.07	0.57**	1.00				
15 Absorption - Highest Score	0.33**	0.15**	0.48**	0.22**	0.15**	0.12*	-0.03	-0.06	0.04	-0.04	-0.07	-0.07	0.68**	0.31**	1.00			
16 Vigor - Highest Score	0.21**	0.16**	0.14**	0.25**	0.10*	0.18**	0.09	0.07	0.02	0.09	-0.01	0.06	0.35**	0.15**	0.34**	1.00		
17 Job Satisfaction - Highest Score	0.36**	0.25**	0.34**	0.28**	0.48**	0.39**	0.02	-0.03	0.01	0.00	0.00	0.03	0.46**	0.43**	0.23**	0.12*	1.00	
18 Commitment - Highest Score	0.35**	0.23**	0.37**	0.24**	0.37**	0.43**	0.01	-0.05	0.04	-0.02	-0.01	0.05	0.52**	0.48**	0.26**	0.24**	0.71**	1.00

Note: Sample includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; $n = 421$; * $p < .05$; ** $p < .01$.

Table 16

Descriptive Statistics for Unit-Level Business Metrics

Metric	Minimum	Maximum	Mean	SD
<i>2008 Business Metrics</i>				
Voluntary Turnover	0.0%	60.6%	11.8%	12.1%
Operating Ratio	-3.39	4.01	0.17	0.33
EBITDA (per N)	-165,502.92	385,757.14	72,787.74	79,728.93
<i>2009 Business Metrics</i>				
Voluntary Turnover	0.0%	60.9%	6.9%	9.72%
Operating Ratio	-8.12	32.13	0.31	1.94
EBITDA (per N)	-127,594.47	318,392.48	34,647.87	77,511.48

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%. Turnover sample was n= 420 for 2009 and n=382 for 2008. For financial performance metrics, the unit also needed to be considered a profit center; sample sizes ranged from 264 to 297.

Table 17

Correlations Between Engagement and 2009 Business Metrics

Composition Model	Voluntary Turnover	Operating Ratio	EBITDA (per N)
Average Unit Engagement Score	-0.03	0.06	-0.10
Lowest Unit Engagement Score	-0.11*	0.06	-0.28**
Highest Unit Engagement Score	0.06	0.03	0.14*

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; n= 420 for 2009. For financial performance metrics, the unit also needed to be considered a profit center; sample sizes ranged from 295 to 297. ** $p < .01$.

Figure 2

Relationship between the Minimum Score on Engagement and 2009 Voluntary Turnover

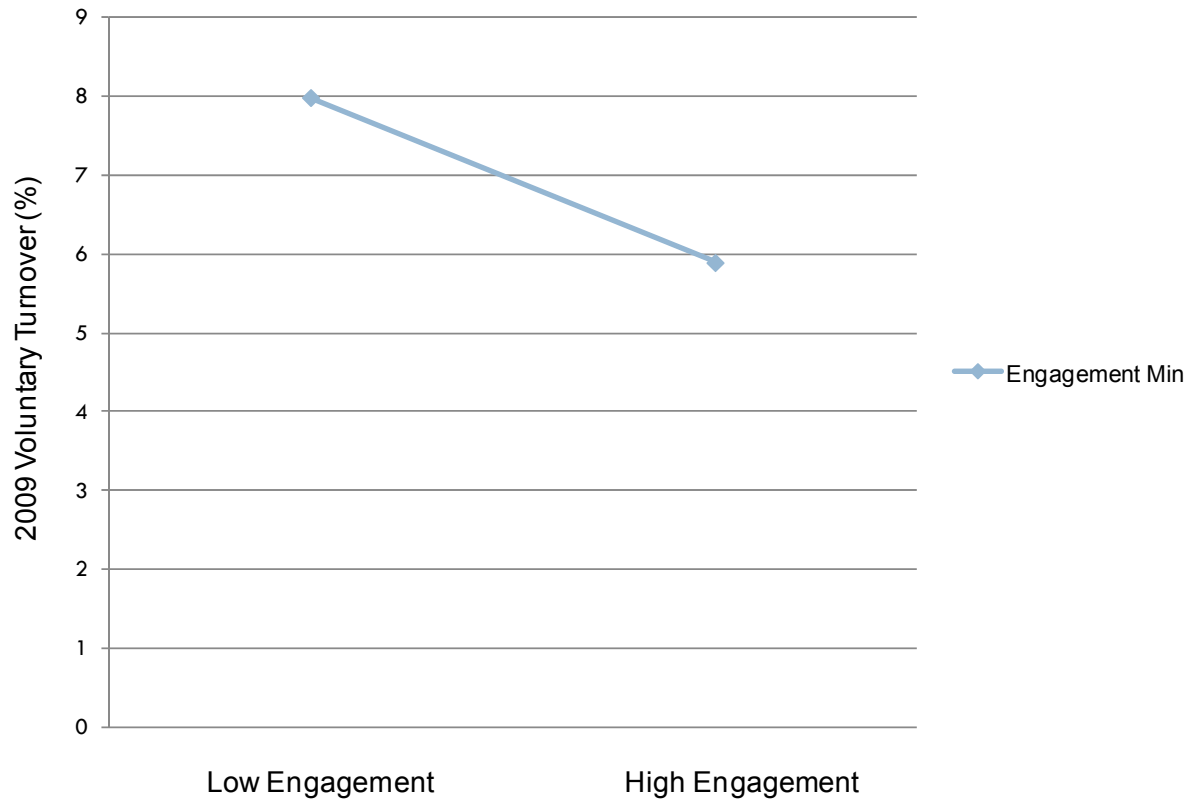


Figure 3

Relationships between the Minimum and Maximum Scores on Engagement and 2009 EBITDA

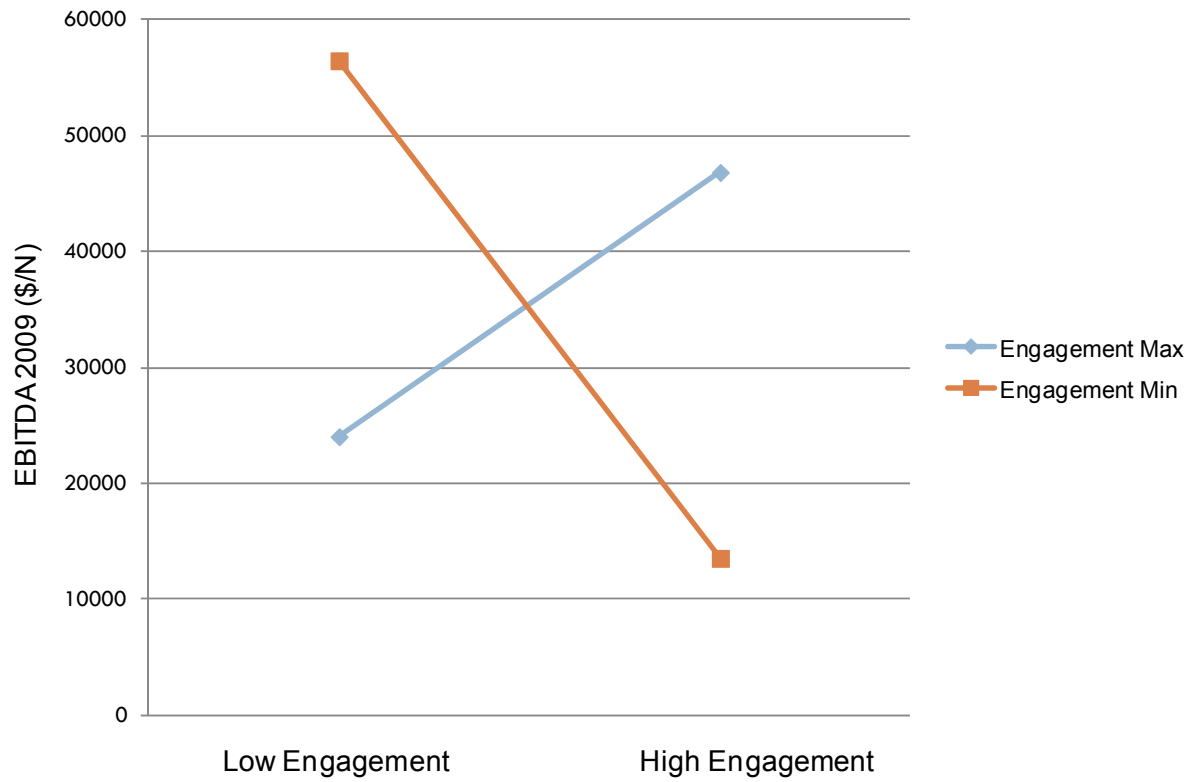


Table 18

Correlations Between Engagement Facets and 2009 Business Metrics

Composition Model	Voluntary Turnover	Operating Ratio	EBITDA (per N)
<i>Dedication</i>			
Average Unit Dedication Score	-0.10*	0.03	-0.19**
Lowest Unit Dedication Score	-0.10*	0.07	-0.35**
Highest Unit Dedication Score	0.00	0.01	0.10
<i>Absorption</i>			
Average Unit Absorption Score	0.10*	0.11	0.13*
Lowest Unit Absorption Score	-0.05	0.10	-0.06
Highest Unit Absorption Score	0.09	0.02	0.09
<i>Vigor</i>			
Average Unit Vigor Score	0.01	-0.00	-0.13*
Lowest Unit Vigor Score	-0.05	-0.01	-0.29**
Highest Unit Vigor Score	-0.06	0.00	0.08

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; n= 420 for 2009. For financial performance metrics, the unit also needed to be considered a profit center; sample sizes ranged from 295 to 297. ** $p < .01$.

Figure 4

Relationships between the Engagement Facets and 2009 Voluntary Turnover

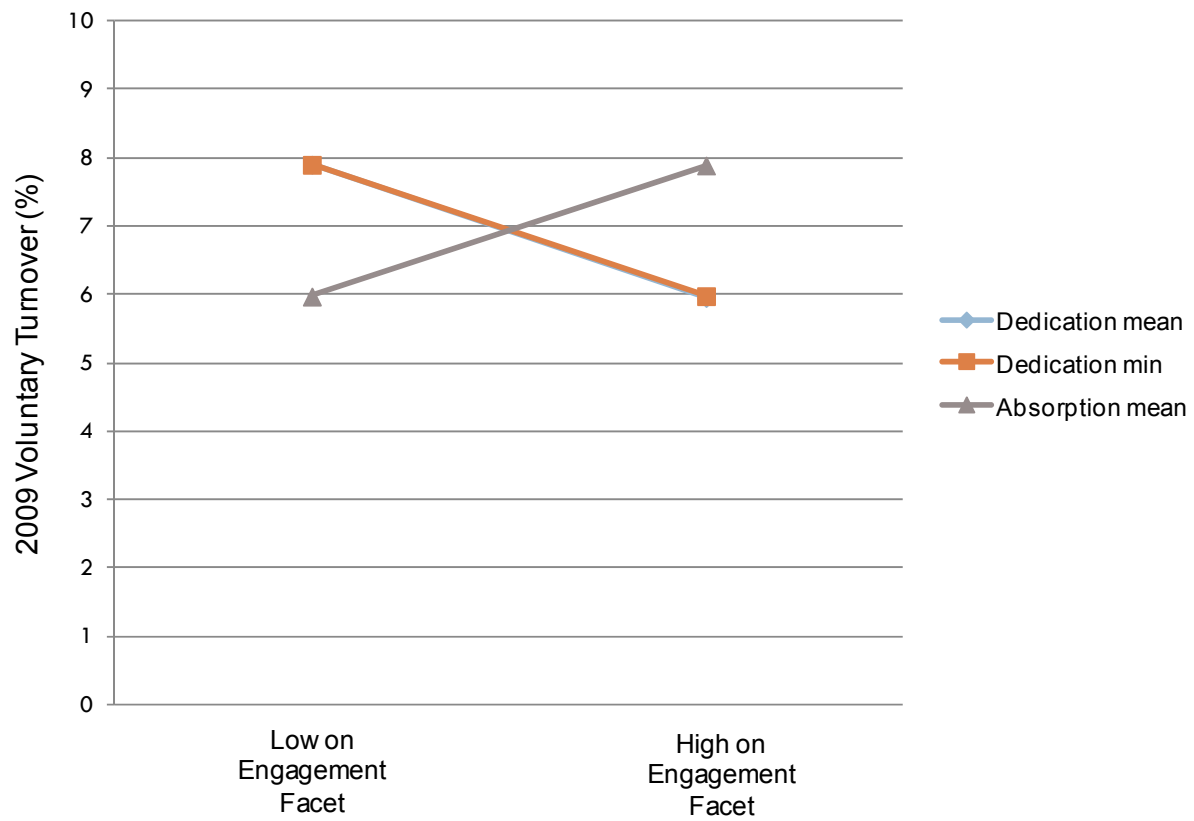


Figure 5

Relationships between Mean Scores on the Engagement Facets and 2009 EBITDA

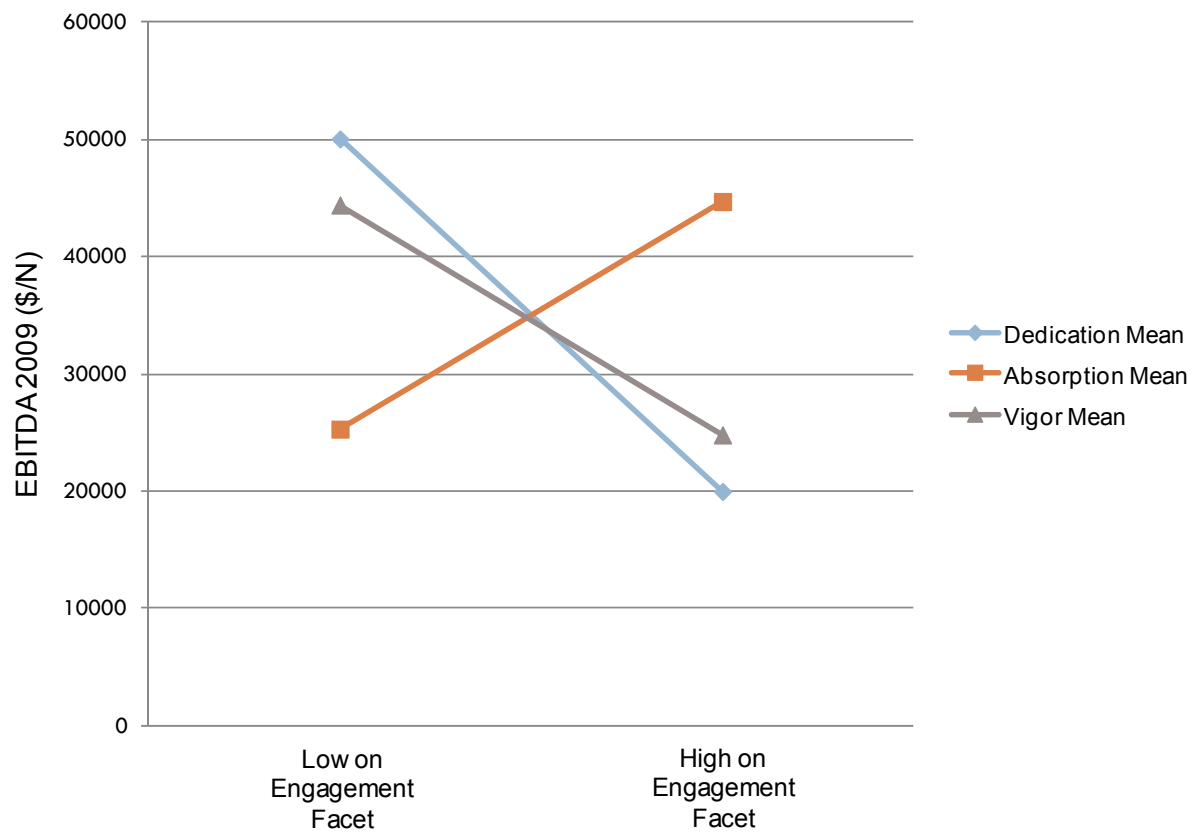


Figure 6

Relationships between Minimum Scores on the Engagement Facets and 2009 EBITDA

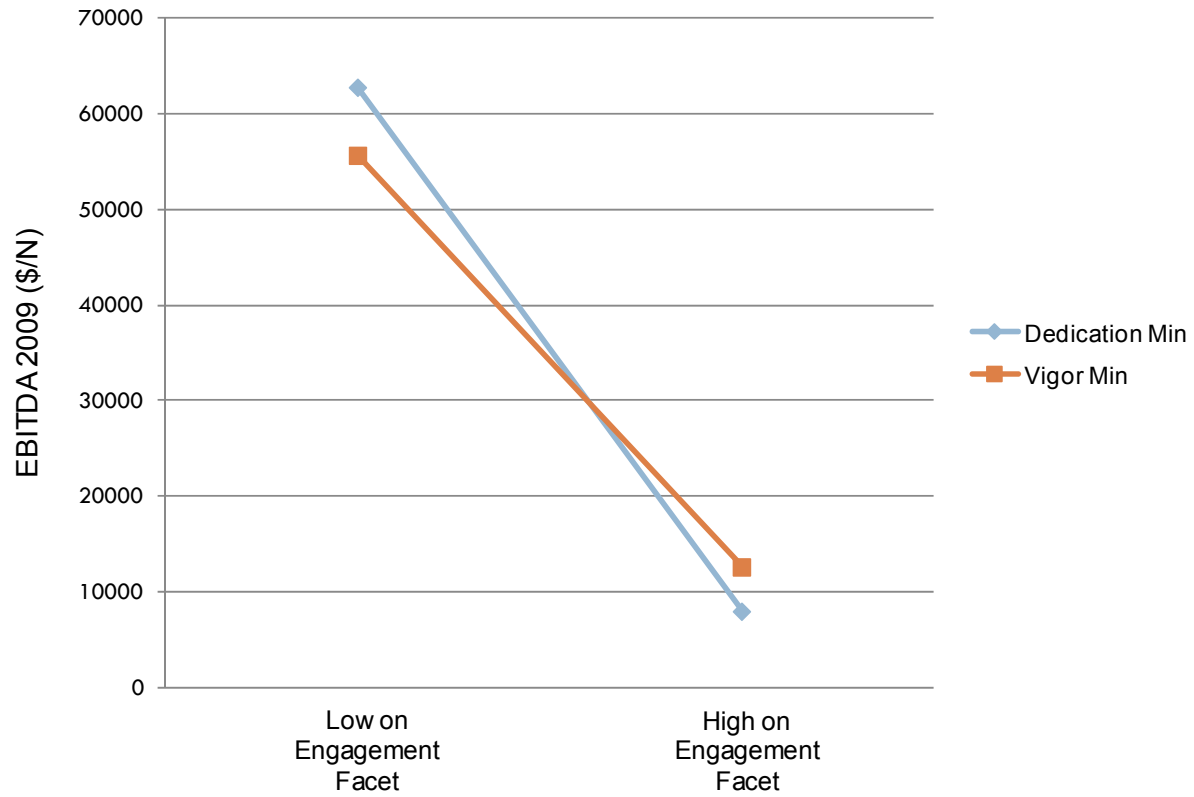


Table 19

Correlations Between Job Attitude Measures and 2009 Business Metrics

Composition Model	Voluntary Turnover	Operating Ratio	EBITDA (per N)
<i>Engagement</i>			
Average Unit Engagement Score	-0.03	0.06	-0.10
Lowest Unit Engagement Score	-0.11*	0.06	-0.28**
Highest Unit Engagement Score	0.06	0.03	0.14*
<i>Job Satisfaction</i>			
Average Unit Job Satisfaction Score	-0.07	-0.10	-0.06
Lowest Unit Job Satisfaction Score	-0.14**	-0.01	-0.23**
Highest Unit Job Satisfaction Score	0.03	-0.04	0.16**
<i>Organizational Commitment</i>			
Average Unit Organizational Commitment Score	-0.12**	-0.11	-0.08
Lowest Unit Organizational Commitment Score	-0.16**	-0.01	-0.24**
Highest Unit Organizational Commitment Score	0.01	-0.06	0.18**

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; n= 420 for 2009. For financial performance metrics, the unit also needed to be considered a profit center; sample sizes ranged from 295 to 297. * $p < .05$; ** $p < .01$.

Figure 7

Relationships between the Minimum Scores on the Job Attitude Measures and 2009 Voluntary Turnover

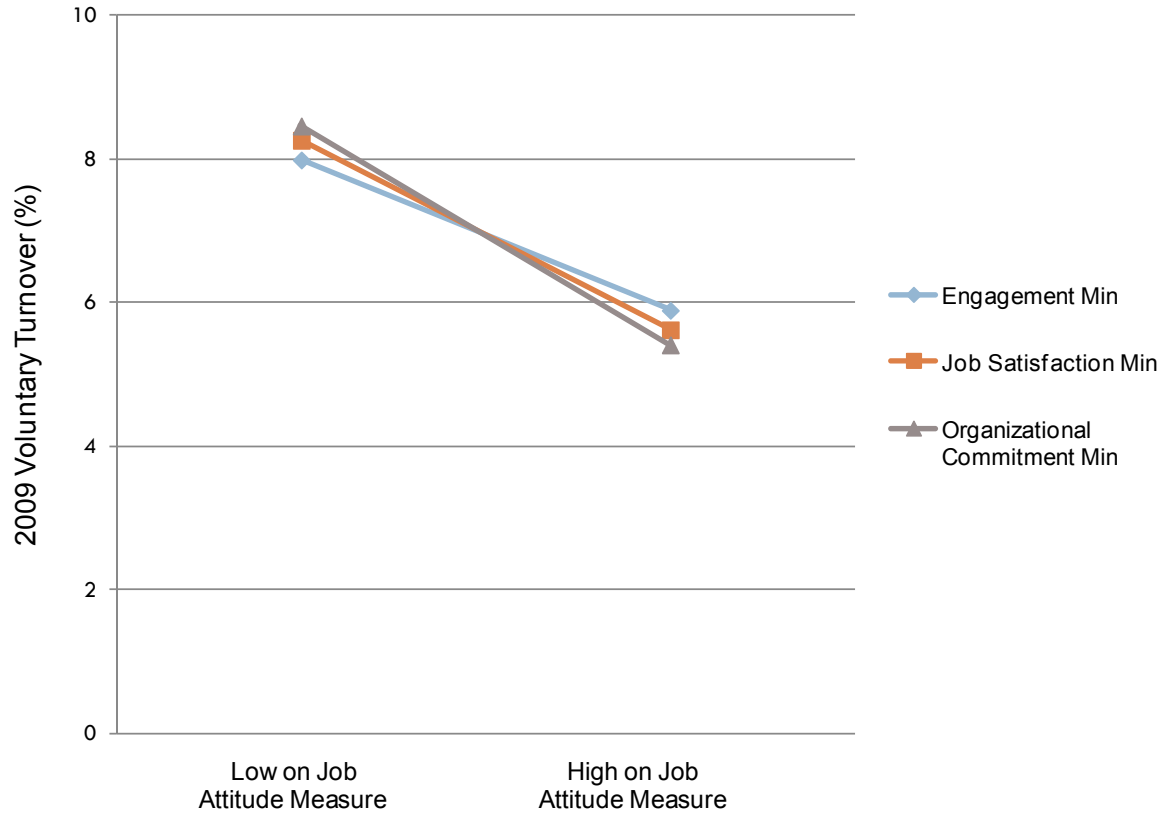


Figure 8

Relationships between the Maximum Scores on the Job Attitude Measures and 2009 EBITDA

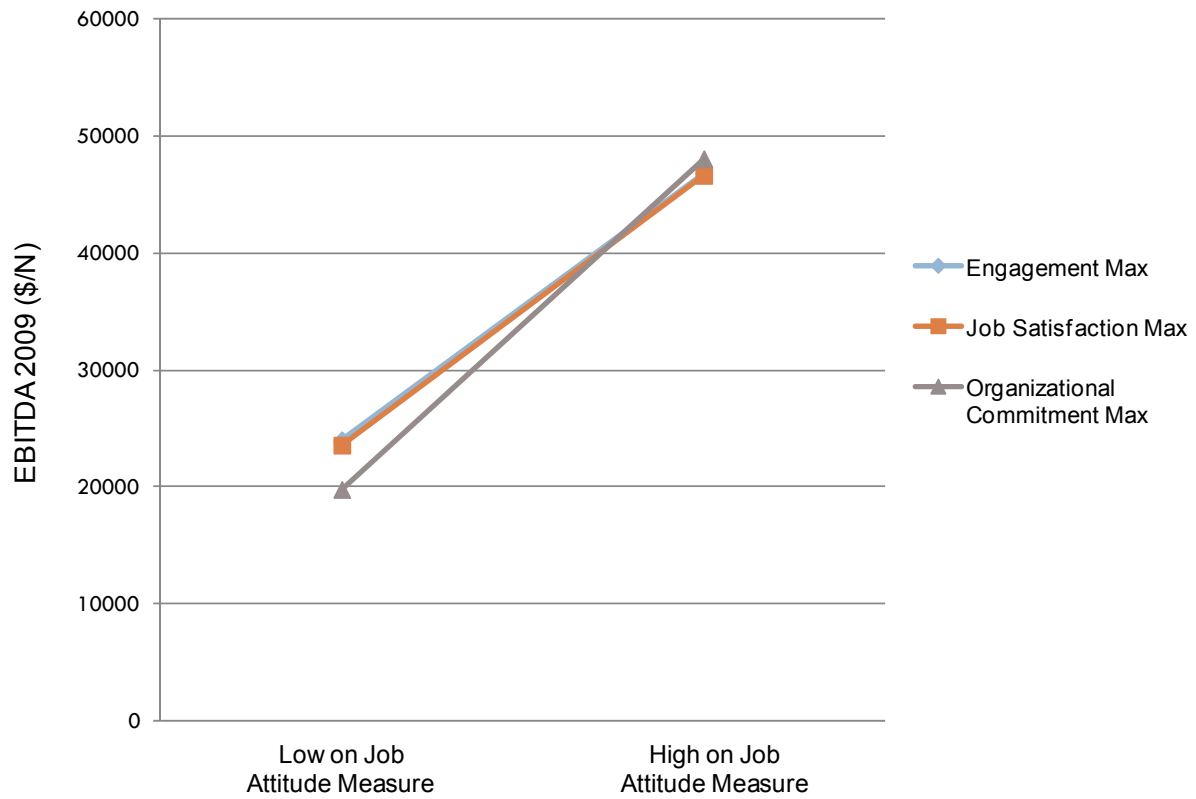


Figure 9

Relationships between the Minimum Scores on the Job Attitude Measures and 2009 EBITDA

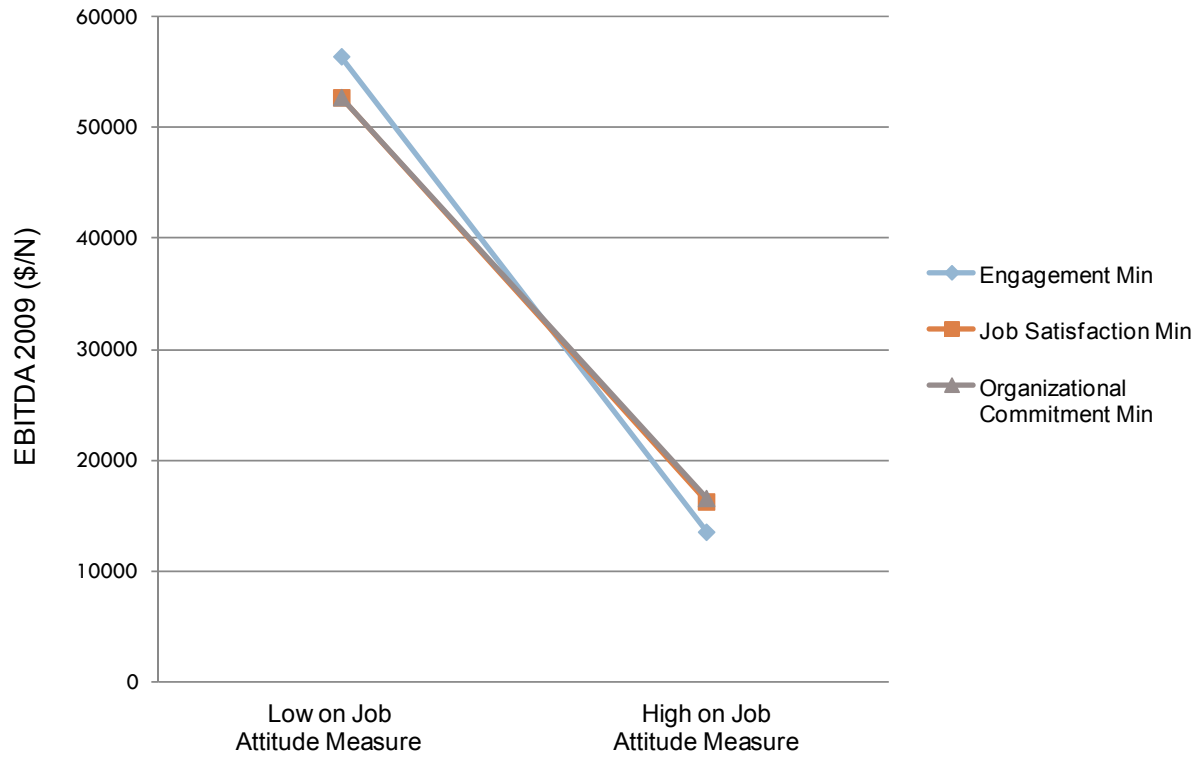


Table 20

Regression Results for 2009 Voluntary Turnover

	<i>R</i>	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>Partial Correlation</i>
	.16	.03*					
Engagement – Lowest Score			.10	1.13	.01	.09	.00
Job Satisfaction – Lowest Score			-.45	1.04	-.03	-.43	-.02
Commitment – Lowest Score			-1.70	1.08	-.14	-1.58	-.08

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; $n = 419$; * $p < .05$.

Table 21

Regression Results for 2009 Earnings Using Highest Unit Scores

	<i>R</i>	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>Partial Correlation</i>
	.19	.04*					
Engagement – Highest Score			52,357.97	54,608.49	.07	.96	.06
Job Satisfaction – Highest Score			16,941.96	29,849.23	.05	.57	.03
Commitment – Highest Score			62,242.05	50,184.61	.11	1.24	.07

Note: Sample for earnings analyses includes only units in which 5 or more individuals completed the survey, the survey participation rate was at least 50%, and the unit was considered a profit center; $n = 294$; * $p < .05$.

Table 22

Regression Results for 2009 Earnings Using Lowest Unit Scores

	<i>R</i>	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>Partial Correlation</i>
	.29	.09***					
Engagement – Lowest Score			-27,436.56	10,153.65	-.21**	-2.70	-.16*
Job Satisfaction – Lowest Score			-10,267.41	9,501.24	-.10	-1.08	-.06
Commitment – Lowest Score			-2,612.22	9,702.29	-.03	-.27	-.02

Note: Sample for earnings analyses includes only units in which 5 or more individuals completed the survey, the survey participation rate was at least 50%, and the unit was considered a profit center; $n = 294$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 23

Mediation Results for Voluntary Turnover

	<i>R</i>	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>t</i>
<i>Step 1: Relationship between IV and DV</i>						
2008 Turnover on 2009 Turnover	0.13	0.02*	0.11	0.04	0.13*	2.55
<i>Step 2: Relationship between Mediator and IV</i>						
Engagement on 2008 Turnover	0.02	0.00	0.38	1.05	0.02	0.37

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; $n = 380$; * $p < .05$.

Table 24

Mediation Results for Earnings Using Lowest Unit Engagement Score

	<i>R</i>	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>t</i>
<i>Step 1: Relationship between IV and DV</i>						
2008 Earnings on 2009 Earnings	0.86	0.73***	0.88	0.03	0.86***	26.71
<i>Step 2: Relationship between Mediator and IV</i>						
Engagement (min) on 2008 Earnings	0.28	0.08***	-38,016.67	7,966.85	-0.28***	-4.77
<i>Step 3: Relationship between IV, Mediator and DV</i>						
<i>Block 1:</i>	0.86	0.73***				
2008 Earnings			0.88	0.03	0.86***	26.71
<i>Block 2:</i>	0.86	0.74***				
2008 Earnings			0.86	0.03	0.84***	25.23
Engagement (min)			-6,127.73	4,414.76	-0.05	-1.388

Note: Sample for earnings analyses includes only units in which 5 or more individuals completed the survey, the survey participation rate was at least 50%, and the unit was considered a profit center; $n = 261$; *** $p < .001$.

Table 25

Mediation Results for Earnings Using Highest Unit Engagement Score

	<i>R</i>	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>t</i>
<i>Step 1: Relationship between IV and DV</i>						
2008 Earnings on 2009 Earnings	0.86	0.73***	0.88	0.03	0.86***	26.71
<i>Step 2: Relationship between Mediator and IV</i>						
Engagement (max) on 2008 Earnings	0.22	0.05***	175,137.98	48970.02	0.22***	3.58
<i>Step 3: Relationship between IV, Mediator and DV</i>						
<i>Block 1:</i>	0.86	0.73***				
2008 Earnings			0.88	0.03	0.86***	26.71
<i>Block 2:</i>	0.86	0.73***				
2008 Earnings			0.88	0.03	0.86***	26.15
Engagement (max)			-10,871.87	26,225.02	-0.01	-0.42

Note: Sample for earnings analyses includes only units in which 5 or more individuals completed the survey, the survey participation rate was at least 50%, and the unit was considered a profit center; $n = 261$; *** $p < .001$.

Table 26

Mean Differences between Supervisors and Employees on the Job Attitude Variables

Job Attitude Variable	Means by Group		T-test Result	Cohen's d
	Supervisors (n = 2,493)	Employees (n = 7,300)		
Engagement	4.50	4.47	$t = 2.916, df = 4747.23, p < .001$	0.07
Dedication	4.57	4.45	$t = 8.757, df = 4948.98, p < .001$	0.20
Absorption	4.04	4.19	$t = -8.183, df = 4097.79, p < .001$	-0.19
Vigor	4.81	4.78	$t = 3.046, df = 4802.09, p < .001$	0.07
Job Satisfaction	4.12	4.03	$t = 5.708, df = 4607.80, p < .001$	0.13
Organizational Commitment	4.35	4.22	$t = 7.934, df = 4787.83, p < .001$	0.18

Table 27

Correlations between Engagement and 2009 Business Metrics – Overall, Supervisors, and Employees

Composition Model	Voluntary Turnover	Operating Ratio	EBITDA (per N)
<i>Average Unit Engagement Score</i>			
Overall	-.03	.06	-.10
Supervisors	-.02	-.01	.03
Employees	-.01	.13*	-.14*
<i>Lowest Unit Engagement Score</i>			
Overall	-.11*	.06	-.28**
Supervisors	-.06	-.03	-.18**
Employees	-.10*	.11	-.32**
<i>Highest Unit Engagement Score</i>			
Overall	.06	.03	.14*
Supervisors	-.00	.02	.16**
Employees	.07	.03	.12*

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; n= 420 for 2009. For financial performance metrics, the unit also needed to be considered a profit center; sample sizes ranged from 295 to 297. * $p < .05$; ** $p < .01$.

Table 28

Moderation Results for Voluntary Turnover Using the Lowest Unit Engagement Score

	<i>R</i>	<i>R</i> ²	ΔR^2	<i>B</i>	<i>SE</i>	β	<i>t</i>
<i>Step 1: Relationship between IVs and DV</i>							
	.11	.01	.01				
(Constant)				6.942	.472		14.694
Engagement Min				-2.266	1.618	-.136	-1.400
Engagement SD				-1.951	5.908	-.032	-.330
<i>Step 2: Relationship between IVs, Moderator, and DV</i>							
	.11	.01	.00				
(Constant)				6.930	.555		12.497
Engagement Min				-2.257	1.638	-.135	-1.378
Engagement SD				-1.971	5.937	-.032	-.332
Engagement Min * Engagement SD				-.141	3.617	-.002	-.039

Note: Sample for turnover analyses includes only units in which 5 or more individuals completed the survey and the survey participation rate was at least 50%; *n* = 380.

Table 29

Moderation Results for Earnings Using the Lowest Unit Engagement Score

	<i>R</i>	<i>R</i> ²	ΔR^2	<i>B</i>	<i>SE</i>	β	<i>t</i>
<i>Step 1: Relationship between IVs and DV</i>							
	.35	.13***	.126***				
(Constant)				35,092.99	4,235.22		8.286
Engagement Min				-87,356.78	14,494.56	-.656***	-6.027
Engagement SD				-208,616.56	51,884.32	-.438***	-4.021
<i>Step 2: Relationship between IVs, Moderator, and DV</i>							
	.36	.13***	.004				
(Constant)				37,941.96	4,916.35		7.718
Engagement Min				-90,192.21	14,699.33	-.677***	-6.136
Engagement SD				-203814.30	52,028.82	-.427***	-3.917
Engagement Min * Engagement SD				34,558.48	30,329.72	.069	1.139

Note: Sample for earnings analyses includes only units in which 5 or more individuals completed the survey, the survey participation rate was at least 50%, and the unit was considered a profit center; $n = 261$; *** $p < .001$.

Table 30

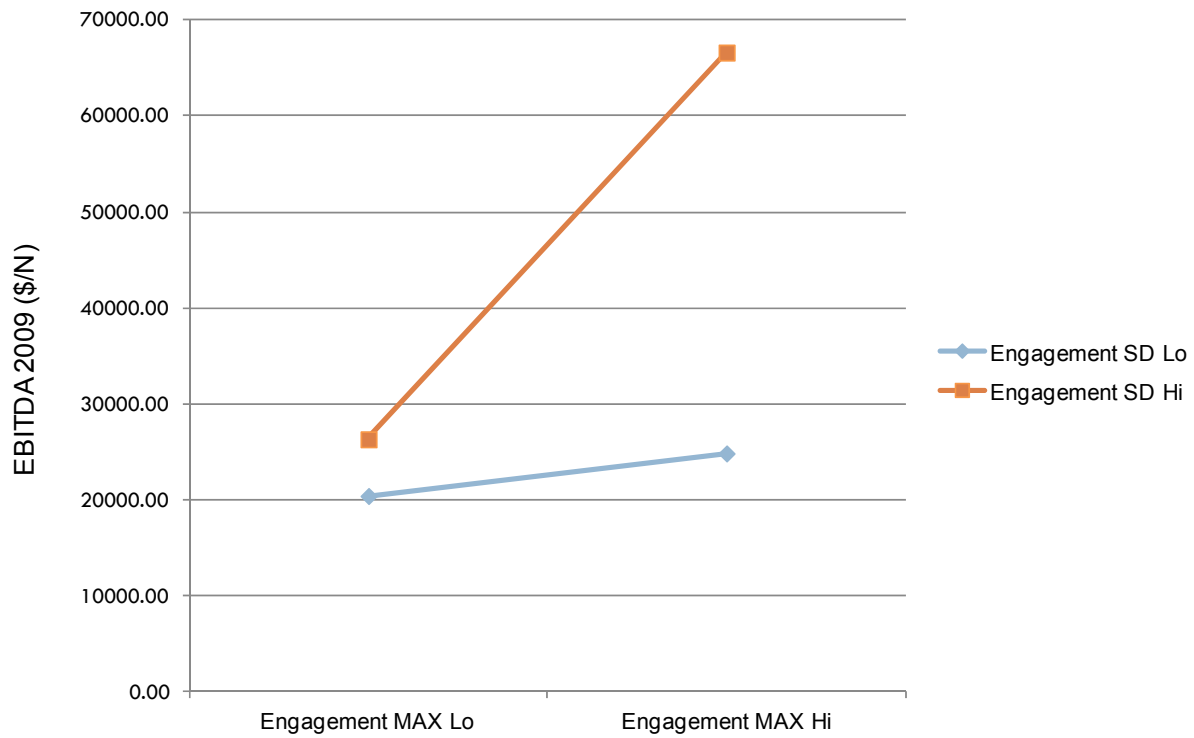
Moderation Results for Earnings Using the Highest Unit Engagement Score

	<i>R</i>	<i>R</i> ²	ΔR^2	<i>B</i>	<i>SE</i>	β	<i>t</i>
<i>Step 1: Relationship between IVs and DV</i>							
	.18	.03**	.034**				
(Constant)				35,207.38	4,455.77		7.902
Engagement Max				106,447.91	46,720.95	.131*	2.278
Engagement SD				56,814.13	27,507.95	.119*	2.065
<i>Step 2: Relationship between IVs, Moderator, and DV</i>							
	.23	.06**	.021*				
(Constant)				34,570.73	4,422.24		7.817
Engagement Max				117,570.42	46,502.37	.145*	2.528
Engagement SD				74,770.08	28,164.73	.157**	2.655
Engagement Max * Engagement SD				591,466.38	233,668.81	.150*	2.531

Note: Sample for earnings analyses includes only units in which 5 or more individuals completed the survey, the survey participation rate was at least 50%, and the unit was considered a profit center; $n = 261$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 10

The Impact of Unit-Level Standard Deviation on Engagement on the Relationship between Earnings and the Highest Unit Engagement Score



REFERENCES

- Albrecht, S.L. (2010). Employee engagement: 10 key questions for research and practice. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 3-19). Cheltenham, UK: Edward Elgar.
- Aselstine, K. & Alletson, K. (2006, March/April). A new deal for the 21st century workplace. *Ivey Business Journal*, 1-9.
- Attridge, M. (2009). Measuring and managing employee work engagement: A review of the research and business literature. *Journal of Workplace Behavioral Health*, 24, 383-398.
- Bakker, A.B. (2009). Building engagement in the workplace. In R.J. Burke & C.L. Cooper (Eds.), *The peak performing organization* (pp. 50-72). Oxon, UK: Routledge.
- Bakker, A.B. (2010). Engagement and "job crafting": engaged employees create their own great place to work. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 229-244). Cheltenham, UK: Edward Elgar.
- Bakker, A.B., Albrecht, S.L., Leiter, M.P. (2011a). Key questions regarding work engagement. *European Journal of Work and Organizational Psychology*, 20, 4-28.
- Bakker, A.B., Albrecht, S.L., Leiter, M.P. (2011b). Work engagement: Further reflections on the state of play. *European Journal of Work and Organizational Psychology*, 20, 74-88.

- Bakker, A.B. & Bal, P.M. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, 83, 189-206.
- Bakker, A.B. & Demerouti, E. (2007). The job demands-resources model: state of the art. *Journal of Managerial Psychology*, 22, 309-328.
- Bakker, A.B. & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International*, 13, 209-223.
- Bakker, A.B. & Demerouti, E. (2009). Work engagement and performance: the role of conscientiousness. *Manuscript in preparation*.
- Bakker, A.B., Demerouti, E., & Euwema, M.C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, 10, 170-180.
- Bakker, A.B., Demerouti, E., & Schaufeli, W.B. (2005). The crossover of burnout and work engagement among working couples. *Human Relations*, 58, 661-689.
- Bakker, A.B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, 43, 83-104.
- Bakker, A.B., Hakanen, J.J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, 99, 274-284.
- Bakker, A.B., Le Blanc, P.M., & Schaufeli, W.B. (2005). Burnout contagion among nurses who work at intensive care units. *Journal of Advanced Nursing*, 51, 276-287.

- Bakker, A.B. & Leiter, M.P. (2010). Where to go from here: Integration and future research on work engagement. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 181-196). New York, NY: Psychology Press.
- Bakker, A.B. & Schaufeli, W.B. (2000). Burnout contagion processes among teachers. *Journal of Applied Social Psychology*, 30, 2289-2308.
- Bakker, A.B., Schaufeli, W.B., Demerouti, E. & Euwema, M.C. (2006). An organisational and social psychological perspective on burnout and work engagement. In M. Hewstone, H. Schut, J. de Wit, K. van den Bos, & M. Stroebe (Eds.), *The Scope of Social Psychology: Theory and Applications*. (pp. 229-252). Andover, UK: Psychology Press.
- Bakker, A.B., Shimazu, A., Demerouti, E., Shimada, K., & Kawakami, N. (2011). Crossover of work engagement among Japanese couples: Perspective taking by both partners. *Journal of Occupational Health Psychology*, 16, 112-125.
- Bakker, A.B., van Emmerik, H., & Euwema, M.C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations*, 33, 464-489.
- Bakker, A.B. & Xanthopoulou, D. (2009). The crossover of daily work engagement: Test of an actor-partner interdependence model. *Journal of Applied Psychology*, 94, 1562-1571.
- Balducci, C., Fraccaroli, F., & Schaufeli, W.B. (2010). Psychometric properties of the Italian version of the Utrecht Work Engagement Scale (UWES-9): A cross-cultural analysis. *European Journal of Psychological Assessment*, 26, 143-149.
- Baron, R.M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in

- social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Barsade, S.G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, 47, 644-675.
- Bates, S. (2004 Feb). Getting engaged. *HR Magazine*, 44-51.
- Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.
- Bentler, P.M. & Bonett, D. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588-606.
- BlessingWhite. (2008). *The state of employee engagement—2008: North American overview* [White Paper]. Princeton, NJ: Author.
- Brown, S.P. (1996). A meta-analysis and review of organizational research on job involvement. *Psychological Bulletin*, 120, 235-255.
- Browne, M.W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.), *Testing Structural Equation Models* (pp. 136-162). Newbury Park, CA: Sage.
- Burke, Inc. (2009). *Building and enhancing employee engagement and retention*. Available at: www.burke.com.
- Cantrell, S. & Benton, J.M. (2005). Harnessing the power of an engaged workforce. *Outlook*, 55-65. (Accenture publication available at: www.accenture.com/Outlook)
- Chan, D. (1998). Functional relations among constructs in the same content domain at

- different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, 83, 234-246.
- Christian, M.S., Garza, A.S., & Slaughter, J.E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, 64, 89-136.
- Cohen, J., Cohen, P., West, S.G., and Aiken, L.S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences (3rd ed.)*. New Jersey: Lawrence Erlbaum Associates, Publishers.
- Corporate Executive Board. (2004). *Driving employee performance and retention through engagement: A quantitative analysis of the effectiveness of employee engagement strategies*. Available at: www.executiveboard.com/.
- Crabtree, S. (2005, Jan 13). Engagement keeps the doctor away. *Gallup Management Journal*. Available at: <http://gmj.gallup.com/>.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper & Row.
- Dalal, R.S., Baysinger, M., Brummel, B.J., & LeBreton, J.M. (2009). The relative importance of employee engagement, other job attitudes and trait affect as predictors of overall employee job performance. *Paper presented at the 2009 annual conference of the Society for Industrial and Organizational Psychology in New Orleans, LA*.
- Dalal, R.S., Brummel, B.J., Wee, S., & Thomas, L.L. (2008). Defining employee engagement for productive research and practice. *Industrial and Organizational Psychology*, 1, 52-55.

- Demerouti, E. & Bakker, A.B. (2011). The job demands-resources model: Challenges for future research. *South African Journal of Industrial Psychology*, 37, 1-9.
- Demerouti, E., Bakker, A.B., Nachreiner, F., & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499-512.
- Demerouti, E. & Cropanzano, R. (2010). From thought to action: Employee work engagement and job performance. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 147-163). New York, NY: Psychology Press.
- Dikkers, J.S.E., Jansen, P.G.W., de Lange, A.H., Vinkenburgh, C.J., & Kooij, D. (2010). Proactivity, job characteristics, and engagement: A longitudinal study. *Career Development International*, 15, 59-77.
- Durán, M.A., Extremera, N. & Rey, L. (2010). Analyzing the contribution of emotional intelligence and core self-evaluations as personal resources to employee engagement. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 209-217). Cheltenham, UK: Edward Elgar.
- Employee engagement key to improved results. *Post Magazine*. (2011, 21 June). *General OneFile*. Web. 15 Jan. 2012.
- Engelbrecht, S. (2006). *Motivation and burnout in human service work: The case of midwifery in Denmark*. (Unpublished doctoral dissertation). Roskilde University, Roskilde.
- Erickson, T.J. (2005). Testimony submitted before the U.S. Senate Committee on

Health, Education, Labor and Pensions, May 26.

- Fleck, S. & Inceoglu, I. (2010). A comprehensive framework for understanding and predicting engagement. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 31-42). Cheltenham, UK: Edward Elgar.
- Fox, A. (2010). Raising Engagement. *HR Magazine*, 55, 34-40.
- Gorgievski, M.J., Bakker, A.B., & Schaufeli, W.B. (2010). Work engagement and workaholism: Comparing the self-employed and salaried employees. *The Journal of Positive Psychology*, 5, 83-96.
- Gruman, J.A. & Saks, A.M. (2011). Performance management and employee engagement. *Human Resource Management Review*, 21, 123-136.
- Hakanen, J.J., Bakker, A.B., & Demerouti, E. (2005). How dentists cope with their job demands and stay engaged: the moderating role of job resources. *European Journal of Oral Sciences*, 113, 479-487.
- Hakanen, J.J., Bakker, A.B., & Schaufeli, W.B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43, 495-513.
- Hakanen, J.J., Perhoniemi, L., & Toppinen-Tanner, S. (2008). Positive gain spirals at work: From job resources to work engagement, personal initiative and work-unit innovativeness. *Journal of Vocational Behavior*, 73, 78-91.
- Hakanen, J.J. & Roodt, G. (2010). Using the job demands-resources model to predict engagement: Analysing a conceptual model. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 85-101). New York, NY: Psychology Press.

- Hakanen, J.J., Schaufeli, W.B., & Ahola, K. (2008). The job demands-resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress, 22*, 224-241.
- Halbesleben, J.R.B. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 102-117). New York, NY: Psychology Press.
- Halbesleben, J.R.B. & Wheeler, A.R. (2008). The relative roles of engagement and embeddedness in predicting job performance and intention to leave. *Work & Stress, 22*, 242-256.
- Hallberg, U.E. & Schaufeli, W.B. (2006). "Same same" but different? Can work engagement be discriminated from job involvement and organizational commitment? *European Psychologist, 11*, 119-127.
- Harter, J.K. & Schmidt, F.L. (2008). Conceptual versus empirical distinctions among constructs: Implications for discriminant validity. *Industrial and Organizational Psychology, 1*, 36-39.
- Harter, J.K., Schmidt, F.L., & Hayes, T.L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology, 87*, 268-279.
- Harter, J.K., Schmidt, F.L., & Keyes, C.L.M. (2003). Well-being in the workplace and its relationship to business outcomes: A review of the Gallup studies. In C.L.M. Keyes & J. Haidt (Eds.), *Flourishing: The Positive Person and the Good Life*. (pp. 205-224). Washington D.C.: American Psychological Association.

- Harter, J.K., Schmidt, F.L., Killham, E.A., & Agrawal, S. (2009). *Q12 meta-analysis: The relationship between engagement at work and organizational outcomes*. Gallup White Paper.
- Hewitt Website (2010). <http://www.hewittassociates.com/Intl/NA/en-US/Consulting/ServiceTool.aspx?cid=2256>
- Hinkin, T.R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1, 104-121.
- Hobfoll, S.E., Johnson, R.J., Ennis, N., & Jackson, A.P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology*, 84, 632-643.
- Hoyle, R.H. (1995). *Structural Equation Modeling: Concepts, Issues, and Applications*. Thousand Oaks, CA: Sage.
- Hu, L.-T. & Bentler, P.M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- Huang, J.L., Curran, P.G., Keeney, J., Poposki, E.M., & DeShon, R.P. (2012). Detecting and deterring insufficient effort responding to surveys. *Journal of Business Psychology*, 27, 99-114.
- Hyvönen, K., Feldt, T., Salmela-Aro, K., Kinnunen, U., & Mäkikangas, A. (2009). Young managers' drive to thrive: A personal work goal approach to burnout and work engagement. *Journal of Vocational Behavior*, 75, 183-196.
- Inceoglu, I. & Fleck, S. (2010). Engagement as a motivational construct. In S.L.

- Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 74-86). Cheltenham, UK: Edward Elgar.
- James, L.R., Demaree, R.G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, 69, 85-98.
- Jamrog, J. (2004). The perfect storm: The future of retention and engagement. *Human Resource Planning*, 27, 26-33.
- Jöreskog, K.G. & Sörbom, D. (2005). *LISREL 8.72 User's Reference Guide*. Lincolnwood, IL: Scientific Software International, Inc..
- Kahn, W.A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33, 692-724.
- Kahn, W.A. (1992). To be fully there: Psychological presence at work. *Human Relations*, 45, 321-349.
- Kahn, W.A. (2010). The essence of engagement: lessons from the field. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 20-30). Cheltenham, UK: Edward Elgar.
- Kanungo, R.N. (1979). The concepts of alienation and involvement revisited. *Psychological Bulletin*, 86, 119-138.
- Kanungo, R.N. (1982). Measurement of job and work involvement. *Journal of Applied Psychology*, 67, 341-349.
- Kelly, J.R. & Barsade, S.G. (2001). Moods and emotions in small groups and work teams. *Organizational Behavior and Human Decision Processes*, 86, 99-130.
- Langelaan, S., Bakker, A.B., Schaufeli, W.B. & Van Dooren, L.J.P. (2006). Burnout

and work engagement: Do individual differences make a difference?
Personality and Individual Differences, 40, 521-532.

Lawler, E.E. & Hall, D.T. (1970). Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. *Journal of Applied Psychology*, 54, 305-312.

LeBreton, J.M. & Senter, J.L. (2008). Answers to common questions about interrater reliability and interrater agreement: implications for multilevel modeling. *Organizational Research Methods*, 11, 815-852.

Leiter, M.P. & Bakker, A.B. (2010). Work engagement: Introduction. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 1-9). New York, NY: Psychology Press.

Leiter, M.P. & Maslach, C. (2010). Building engagement: The design and evaluation of interventions. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 164-180). New York, NY: Psychology Press.

Little, B. & Little, P. (2006). Employee engagement: Conceptual issues. *Journal of Organizational Culture, Communication and Conflict*, 10, 111-120.

Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297-1349). Chicago: Rand-McNally.

Lodahl, T.M. & Kejner, M. (1965). The definition and measurement of job involvement. *Journal of Applied Psychology*, 49, 24-33.

Macey, W.H. & Schneider, B. (2008a). The meaning of employee engagement.

Industrial and Organizational Psychology, 1, 3-30.

Macey, W.H. & Schneider, B. (2008b). Engaged in engagement: We are delighted we did it. *Industrial and Organizational Psychology*, 1, 76-83.

Macey, W.H., Schneider, B., Barbera, K.M., & Young, S.A. (2009). *Employee engagement: Tools for analysis, practice, and competitive advantage*. West Sussex, UK: Wiley-Blackwell.

Mark, B.A., Hughes, L.C., Belyea, M., Chang, Y., Hofmann, D., Jones, C.B., & Bacon, C.T. (2007). Does safety climate moderate the influence of staffing adequacy and work conditions on nurse injuries? *Journal of Safety Research*, 38, 431-446.

Maslach, C. (2011). Engagement research: Some thoughts from a burnout perspective. *European Journal of Work and Organizational Psychology*, 20, 47-52.

Maslach, C. & Leiter, M.P. (2008). Early predictors of job burnout and engagement. *Journal of Applied Psychology*, 93, 498-512.

Maslach, C. & Leiter, M.P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it*. San Francisco, CA: Jossey-Bass.

Maslach, C., Schaufeli, W.B., & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422.

Masson, R.C., Royal, M.A., Agnew, T.G., & Fine, S. (2008). Leveraging employee engagement: The practical implications. *Industrial and Organizational Psychology*, 1, 56-59.

May, D.R., Gilson, R.L. & Harter, L.M. (2004). The psychological conditions of

- meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organizational Psychology*, 77, 11-37.
- Meng, X.L., Rosenthal, R. & Rubin, D.B. (1992). Comparing correlated correlation coefficients. *Psychological Bulletin*, 111, 172-175.
- Mercer, LLC. (2007a). *Engaging Employees to Drive Global Business Success: Insights from Mercer's What's Working Research*. Available at: www.mercer.com.
- Mercer, LLC. (2007b). *What's Working: United States*. Available at: www.mercer.com.
- Meyer, J.P. & Allen, N.J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1, 61-89.
- Meyer, J.P. & Allen, N.J. (1997). *Commitment in the workplace*. Thousand Oaks, CA: SAGE Publications.
- Meyer, J.P., Gagne, M., & Parfyonova, N.M. (2010). Toward an evidence-based model of engagement: what we can learn from motivation and commitment research. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 62-73). Cheltenham, UK: Edward Elgar.
- Meyer, J.P., Stanley, D.J., Herscovitch, L. & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20-52.
- Miller, S. (2009). Workers' engagement levels drop, along with their expectations. *HR Magazine*, 54, 16.

- Mostert, K. & Rothman, S. (2006). Work-related well-being in the South African police service. *Journal of Criminal Justice*, 34, 479-491.
- Mowday, R.T., Steers, R.M. & Porter, L.W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14, 224-247.
- Nahrgang, J.D., Morgeson, F.P., & Hofmann, D.A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, 96, 71-94.
- National Bureau of Economic Research. (2010, September 20) U.S. Business Cycle Expansions and Contractions. Retrieved June 2, 2013, from <http://www.nber.org/cycles.html>.
- Nerstad, C.G.L., Richardsen, A.M., & Martinussen, M. (2010). Factorial validity of the Utrecht Work Engagement Scale (UWES) across occupational groups in Norway. *Scandinavian Journal of Psychology*, 51, 326-333.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory* (3rd revised edition). New York, NY: McGraw-Hill.
- Oates, W. (1971). *Confessions of a workaholic: The facts about work addiction*. New York: World Publishing Co.
- O'Neil, L.G. (2010). Economic recovery and employee re-engagement. *HR Magazine*, 55, 8.
- Parker, S.K. & Griffin, M.A. (2011). Understanding active psychological states: Embedding engagement in a wider nomological net and closer attention to performance. *European Journal of Work and Organizational Psychology*, 20, 60-67.

- Prins, J.T., van der Heijden, F.M.M.A., Hoekstra-Weebers, J.E.H.M., Bakker, A.B., van de Wiel, H.B.M., Jacobs, B., & Gazendam-Donofrio, S.M. (2009). Burnout, engagement and resident physicians' self-reported errors. *Psychology, Health & Medicine*, 14, 654-666.
- Pugh, S.D. & Dietz, J. (2008). Employee engagement at the organizational level of analysis. *Industrial and Organizational Psychology*, 1, 44-47.
- Pullan, J. (2011, Sept 1). Employee engagement is now crucial. *Conference & Incentive Travel*, p. 23.
- Rich, B.L., LePine, J.A., & Crawford, E.R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, 53, 617-635.
- Richardson, J. & West, M.A. (2010). Engaged work teams. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 323-340). Cheltenham, UK: Edward Elgar.
- Robison, J. (2009). Building engagement in this economic crisis: How managers can maintain morale and profitability in their increasingly anxious workgroups. *Gallup Management Journal*. Retrieved from <http://gmj.gallup.com/content/115213/building-engagement-economic-crisis.aspx>
- Russell, J.A. (2003). Core affect and the psychological construction of emotions. *Psychological Review*, 110, 145-172.
- Saks, A.M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21, 600-619.
- Saks, A.M. & Gruman, J.A. (2010). Organizational socialization and newcomer

- engagement. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 297-308). Cheltenham, UK: Edward Elgar.
- Salanova, M., Agut, S., & Peiró, J.M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediation of service climate. *Journal of Applied Psychology*, 90, 1217-1227.
- Schaufeli, W.B. (February 2011). *Work engagement: A unique construct?* Presentation at Kent University. Available at: <http://wilmarschaufeli.nl/wp/presentations/>
- Schaufeli, W.B. & Bakker, A.B. (2003). UWES – Utrecht Work Engagement Scale: Test Manual. *Unpublished Manuscript*. Department of Psychology, Utrecht University. Available at <http://www.schaufeli.com>.
- Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25, 293-315.
- Schaufeli, W.B. & Bakker, A.B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 10-24). New York, NY: Psychology Press.
- Schaufeli, W.B., Bakker, A.B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66, 701-706.
- Schaufeli, W.B., Bakker, A.B., van der Heijden, F.M.M.A., & Prins, J.T. (2009).

Workaholism among medical residents: Is it the combination of working excessively and compulsively that counts. *International Journal of Stress Management*, 16, 249-272.

Schaufeli, W.B., Bakker, A.B., & van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30, 893-917.

Schaufeli, W.B., Leiter, M.P., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International*, 14, 204-220.

Schaufeli, W.B., Martínez, I.M., Pinto, A.M., Salanova, M. & Baker, A.B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, 33, 464-481.

Schaufeli, W.B. & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organizations. In S.W. Gilliland, D.D. Steiner, & D.P. Skarlicki (Eds.), *Research in social issues in management (Volume 5): Managing social and ethical issues in organizations*. (pp. 135-177). Greenwich, CT: Information Age Publishers.

Schaufeli, W.B. & Salanova, M. (2008). Enhancing work engagement through the management of human resources. In K. Näswall, M. Sverke & J. Hellgren (Eds.), *The individual in the changing working life*. (pp. 380-404). Cambridge: Cambridge University Press.

Schaufeli, W.B. & Salanova, S. (2010). How to improve work engagement? In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 399-415). Cheltenham, UK: Edward Elgar.

- Schaufeli, W.B. & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. *European Journal of Work and Organizational Psychology*, 20, 39-46.
- Schaufeli, W.B., Salanova, M, González-Romá, V., & Bakker, A.B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3, 71-92.
- Schaufeli, W.B., Taris, T.W., & Bakker, A.B. (2008). It takes two to tango: Workaholism is working excessively and working compulsively. In R.J. Burker & C.L. Cooper (Eds.), *The long work hours culture: Causes, consequences, and choices* (pp. 203 – 226). Bingley, UK: Emerald.
- Schaufeli, W.B., Taris, T.W., & Bakker, A. (2006). Dr. Jekyll and Mr. Hide: On the differences between work engagement and workaholism. In R. Burke (Ed.), *Research companion to working time and work addiction*. (pp. 193-217). Northampton, UK: Edward Elgar.
- Schaufeli, W.B., Taris, T.W., & van Rhenen, W. (2008). Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well-being? *Applied Psychology: An International Review*, 57, 173-203.
- Schneider, B., Macey, W.H., Barbera, K.M., & Martin, N. (2009). Driving customer satisfaction and financial success through employee engagement. *People & Strategy*, 32, 22-27.
- Schneider, B., Macey, W.H., Barbera, K.M, Young, S.A., & Lee, W. (2006).

Employee engagement: Everything you wanted to know about engagement but were afraid to ask. Valtera White Paper, Available at: www.valtera.com/research-insights/

Schohat, L.M. & Vigoda-Gadot, E. (2010). "Engage me once again": is employee engagement for real, or is it "same lady – different dress"? In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 98-107). Cheltenham, UK: Edward Elgar.

Scott, K.S., Moore, K.S., & Miceli, M.P. (1997). An exploration of the meaning and consequences of workaholism. *Human Relations*, 50, 287-314).

Seijts, G. H. & Crim, D. (2006, March/April). What engages employees the most or the ten C's of employee engagement. *Ivey Business Journal*, 1-5.

Seppälä, P., Mauno, S., Feldt, T., Hakanen, J., Kinnunen, U., Tolvanen, A., & Schaufeli, W. (2009). The construct validity of the Utrecht Work Engagement Scale: Multisample and Longitudinal Evidence. *Journal of Happiness Studies*, 10, 459-481.

Shimazu, A., Miyataka, D., & Schaufeli, W.B. (2010). Work engagement from a cultural perspective. In S.L. Albrecht (Ed.), *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*. (pp. 364-372). Cheltenham, UK: Edward Elgar.

Shimazu, A. & Schaufeli, W.B. (2009). Is workaholism good or bad for employee well-being? The distinctiveness of workaholism and work engagement among Japanese employees. *Industrial Health*, 47, 495-502.

Shimazu, A. & Schaufeli, W.B., Miyataka, D., & Iwata, N. (2010). Why Japanese

- workers show low work engagement: An item response theory analysis of the Utrecht Work Engagement Scale. *Biopsychosocial Medicine*, 4, 17-22.
- Shirom, A. (2010). Feeling energetic at work: On vigor's antecedents. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 69-84). New York, NY: Psychology Press.
- Shuck, B. & Wollard, K. (2010). Employee engagement and HRD: A seminal review of the foundations. *Human Resource Development Review*, 9, 89-10.
- Simbula, S., Guglielmi, D. & Schaufeli, W.B. (2011). A three-wave study of job resources, self-efficacy, and work engagement among Italian schoolteachers. *European Journal of Work and Organizational Psychology*, 20, 285-304.
- Smith, P.C., Kendall, L. & Hulin, C.L. (1969). *The measurement of satisfaction in work and retirement: A strategy for the study of attitudes*. Chicago: Rand McNally.
- Sobel, M.E. (1982). Asymptotic intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological methodology 1982*. San Francisco: Jossey-Bass (pp. 290-312).
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88, 518-528.
- Steiger, J.H. & Lind, J.C. (1980, May). *Statistically-based tests for the number of common factors*. Handout for a presentation delivered at the Meeting of the Psychometric Society, Iowa City, IA.
- Stevens, M. (2010, Jan 7). Staff engagement moves up the agenda of top firms. *People Management*, 28.

- Sweetman, D. & Luthans, F. (2010). The power of positive psychology: Psychological capital and work engagement. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 54-68). New York, NY: Psychology Press.
- Sy, T., Cote, S., & Saavedra, R. (2005). The contagious leader: impact of leader's affect on group member affect and group processes. *Journal of Applied Psychology, 88*, 518-528.
- Tabachnick, B.G. & Fidell, L.S. (2007). *Using Multivariate Statistics (5th edition)*. Massachusetts: Pearson Education Co.
- Taris, T.W., Schaufeli, W.B., & Shimazu, A. (2010). The push and pull of work: The differences between workaholism and work engagement. In A.B. Bakker and M.P. Leiter (Eds.), *Work Engagement: A Handbook of Essential Theory and Research*. (pp. 39-52). New York, NY: Psychology Press.
- Torrente, P., Salanova, M., Llorens, S., & Schaufeli, W.B. (2012). Teams make it work: How team work engagement mediates between social resources and performance in teams. *Psicothema, 24*, 106-112.
- Torrente, P., Salanova, M., Llorens, S., & Schaufeli, W.B. (in press). From I to we: The factorial validity of a team work engagement scale. In J. Neves & S.P. Gonçalves (Eds.), *Occupational Health Psychology: From burnout to well-being*. Lisboa: Edições Sílabo.
- Totterdell, P. (2000). Catching moods and hitting runs: Mood linkage and subjective performance in professional sports teams. *Journal of Applied Psychology, 85*, 848-859.

- Totterdell, P.S., Kellet, K., Teuchmann, K., & Briner, R.B. (1998). Evidence of mood linkage in work groups. *Journal of Personality and Social Psychology*, 74, 1504-1515.
- Towers Perrin (2003). Working Today: Understanding What Drives Employee Engagement. *The 2003 Towers Perrin Talent Report*.
- Tucker, L.R. & Lewis, C. (1973). The reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38, 1-10.
- van Beek, I., Hu, Q., Schaufeli, W.B., Taris, T.W., & Schreurs, B.H.J. (2012). For fun, love or money: What drives workaholics, engaged, and burned-out employees at work? *Applied Psychology: An International Review*, 61, 30-55.
- Van den Heuvel, M., Demerouti, E., Schaufeli, W.B., & Bakker, A.B. (2010). Personal resources and work engagement in the face of change. In J. Houdmont and S. Leka (Eds.), *Contemporary occupational health psychology: Global perspectives on research and practice* (pp. 124-150). Chichester: John Wiley and Sons, Ltd.
- Van Rooy, D.L., Whitman, D.S., Hart, D., and Caleo, S. (2011). Measuring employee engagement during a financial downturn: Business imperative or nuisance? *Journal of Business Psychology*, 26, 147-152.
- Wefald, A.J. & Downey, R.G. (2009). Construct dimensionality of engagement and its relation with satisfaction. *The Journal of Psychology*, 143, 91-111.
- Wefald, A.J., Reichard, R.J., & Serrano, S.A. (2011). Fitting engagement into a nomological network: The relationship of engagement to leadership and personality. *Journal of Leadership and Organizational Studies*, 18, 522-537.

- Weinstein, M. (March-April 2010). Engaged employee = business pride. *Training*, 47, 14.
- Wellins, R.S., Bernthal, P., & Phelps, M. (2005). *Employee engagement: The key to realizing competitive advantage* [White Paper]. Development Dimensions International. Retrieved July 3, 2010, from www.ddiworld.com/
- Westman, M. (2002). Crossover of stress and strain in the family and in the workplace. In P.L. Perrewé & D.C. Ganster (Eds.), *Research in occupational stress and well-being* (vol. 2, pp. 143-181). Greenwich, CT: JAI.
- Widaman, K.F. (1985). Hierarchically nested covariance models for multitrait-multimethod data. *Applied Psychological Measurement*, 9, 1-26.
- Xanthopoulou, D., Bakker, A.B., Demerouti, E., & Schaufeli, W.B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, 14, 121-141.
- Xanthopoulou, D., Bakker, A.B., Demerouti, E., & Schaufeli, W.B. (2009a). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior*, 74, 235-244.
- Xanthopoulou, D., Bakker, A.B., Demerouti, E., & Schaufeli, W.B. (2009b). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Occupational and Organizational Psychology*, 82, 183-200.
- Xanthopoulou, D., Bakker, A.B., Heuven, E., Demerouti, E., Schaufeli, W.B. (2008). Working in the sky: A diary study on work engagement among flight attendants. *Journal of Occupational Health Psychology*, 13, 345-356.

Zigarmi, D., Nimon, K., Houson, D., Witt, D., & Diehl, J. (2009). Beyond engagement: Toward a framework and operational definition for employee work passion. *Human Resource Development Review, 13*, 300-326.

ABSTRACT**MOVING ENGAGEMENT RESEARCH TO A HIGHER LEVEL: THE IMPACT OF
UNIT-LEVEL ENGAGEMENT ON BUSINESS METRIC OUTCOMES**

by

TARA K. McCLURE**August 2013****Advisor:** Dr. Boris Baltes**Major:** Psychology (Industrial-Organizational)**Degree:** Doctor of Philosophy

Although engagement has been slow to take hold within the academic literature, it has quickly become a hot topic within the applied and business environments. Because of the rapid growth within these areas, there has been a great deal of conceptual confusion and mystery surrounding the engagement construct. Recent research within the literature has sought to define engagement, differentiate it from existing job attitude constructs, and link it with both personal and organizational outcomes. To date, a majority of the research demonstrating the impact of engagement has been conducted at the individual-level. While individual-level outcomes are of use to organizations, the success of a company is usually measured at higher levels of analysis. The purpose of the current study was to explore the factor structure of a new engagement index, investigate its discriminant validity with two common job attitude measures (job satisfaction and organizational commitment), look at various composition models for aggregating individual-level engagement to the unit level, and determine the relationship between work unit engagement and business metric outcomes (voluntary turnover, operating costs, and earnings). Results of the

current study offer support for the three-factor model of engagement (vigor, dedication, and absorption), as well as the discriminant validity of engagement from other job attitude measures in terms of factor structure. Findings also indicated that alternative compositions models of engagement, such as the lowest and highest scores within the unit, are useful in predicting organizational outcomes. For example, the lowest unit engagement score was negatively related to voluntary turnover and the highest unit engagement score was positively related to earnings. Lastly, while the results offered some evidence to suggest that engagement may uniquely contribute to the prediction of earnings, all three job attitude variables exhibited a similar pattern of correlations with the outcome variables. Implications and future research directions are discussed.

AUTOBIOGRAPHICAL STATEMENT

Tara McClure Johnson was born and raised in the metro-Detroit area. She attended Kalamazoo College, where she majored in economics and business and minored in Chinese. While there, she spent her junior year abroad studying in Beijing, China. She completed an undergraduate thesis titled, “The Changing Corporation: Evolving to a Sustainable Enterprise—A Series of Case Studies Exploring the Effect of Sustainable Development on Today’s Companies.” Tara graduated Summa Cum Laude, earned departmental honors in economics, received the William G. Howard Memorial Prize in Economics, and was inducted into the Phi Beta Kappa Honor’s Society.

After completing her undergraduate degree, she spent four years working at the Henry Ford Hospital Sleep Disorders and Research Center, where she was the research assistant and coordinator for four NIH-funded sleep studies on stress and insomnia. While at the hospital, Tara had the opportunity to present the results of these studies at several national conferences.

Tara joined Wayne State’s I/O Psychology Doctoral Program in the fall of 2005. As a graduate student at Wayne State University, she had the opportunity to work on research projects with Drs. James LeBreton, Boris Baltes, and Chris Berry. Tara was active in the department by editing the I/O area newsletter, Wayne@Work, working on several applied projects through the Applied Psychology and Organizational Research Group (APORG), and teaching lab sessions for Introduction to Psychology and Social Psychology courses. She completed two internships at Ford Motor Company and Aon Consulting, focusing on the areas of selection and assessment and employee engagement.

In 2010, Tara joined Aon Hewitt full-time as an Associate Consultant with the federal practice in Washington, D.C. where she worked with federal agencies, including the Transportation Security Administration and the Internal Revenue Service, to develop and implement selection systems. In 2013, Tara returned to the metro-Detroit area to become a Consultant with the Selection and Assessment practice, where she manages large-scale selection projects for several Fortune 500 organizations.